"We Seek to Serve —and Not to Compete"

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MADRAS INFORMATION

PUBLIC LIBRARY 1961

JULY 1961

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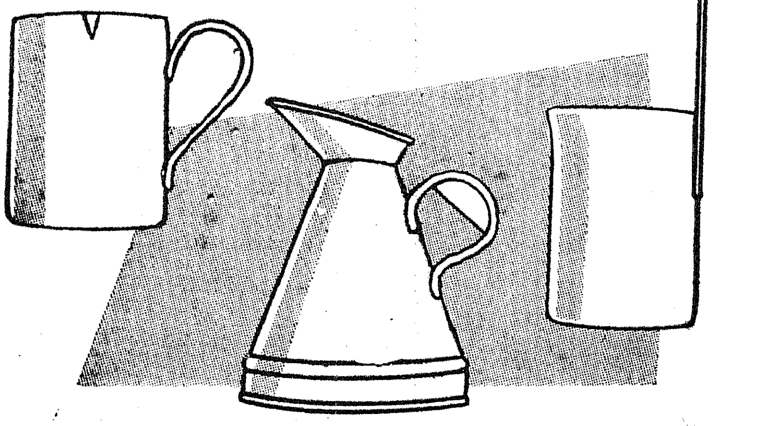
This month's cover

'Vanamahotsava' which is celebrated this month is an international festival and is observed all over the world as the 'Festival of the Forests', 'Festival of Trees', etc. The celebrations are designed to focus attention on the need to preserve and promote forest wealth and on the importance of forest wealth for survival. Our choice for the cover this month has been the banyan tree for it provides a fine symbol of solidity, strength, durability, shade and support.

on to **METRIC CAPACITY MEASURES**



From APRIL 1, 1961, the use of Metric Capacity Measures is compulsory in the Union Territory of Delhi.

In selected areas in the rest of the country, Metric Capacity Measures have been introduced with option to use old measures for one year.

The unit of capacity is LITRE

1 LITRE
=1.1 Seers approx.
=3 Nazhis approx. (Kerala)
=4.5 Ollocks approx. (Madras)

METRIC SYSTEM

FOR

Simplicity & Uniformity

DA 51/109

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Festival of Trees

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[The season of fallowness is over and July has ushered in the sowing season. The monsoon is near. And 'Vanamahotsava' is being celebrated. There is much appropriateness in the sowing season synchronising with the tree-planting festival for there is considerable common ground in the underlying philosophy and ideology of these efforts. This article released in connection with 'Vanamahotsava' is not only a call to conserve forest wealth, but also explains the role of trees in the scheme of life. Details of how this international festival of trees is celebrated in other countries are also given.]

Planting and maintenance of trees are universally recognized as fundamental and purposeful pursuits not merely for mankind's progress but for the very survival of human and animal life. Trees are sustained by land, water and air and reciprocally, they give back to Nature all that the elements contribute to their sustenance. The creation of vast forest assets is therefore regarded as essential to any country's progress, protection and prosperity.

In India the alarming rate of denudation of its forest and timber wealth was noticed soon after Independence and in 1950 "Vanamahotsava"—the annual tree-planting festival was inaugurated. In over a decade this festival has acquired a special significance in our national life. This year, again, Vanamahotsava is being celebrated throughout the country for a week from the 1st of July.

Perennial Source

This is as it should be for trees not only beautifythe land, provide shade, yield flowers and fruit and are a perennial source of fuel, timber, fodder and a host of other products, but also help control floods, preserve moisture in the soil, check the ravages of erosin and act as catalysers in inducing rainfall.

Expressing concern at the cutting down of trees in various parts of the country, the Prime Minister, Sri Jawaharlal Nehru, pointed out some time ago, " It is easy to cut down a tree ; but it takes a generation to grow one. Not a single tree should, therefore be cut down unless absolutely necessary. On the other hand, every attempt should be made to plant and raise more trees. The need for after-care of trees planted is even greater."

Natural Wealth

Vanamahotsava, which literally means " Great Festival of Forests ", is the tribute of the human race to its benefactor—the forest ; it is also the nation's call to the people to conserve, improve and augment what has always been and will continue to remain one of the greatest sources of natural wealth.

In the words of Gautama, the Buddha: "The forest is a peculiar organism of unlimited kindness and benevolence that makes no demands for its sustenance and extends generously the products of its life activity ; it affords protection to all beings, offering shade even to the axeman, who destroys it ".

Festivals elsewhere

These festivals are celebrated all over the world under such names as " Arbor Day " or " Arbor Week ", " Tree Holiday " and " Festival of the Trees ". There is also the " Greening Week " in Japan, " The New Year's Day of the Trees " in Israel, " The Tree-Loving Week " in Korea, " The Reforestation Week " in Yugoslavia and " The Students' Afforestation Day " in Iceland. The annual celebration of Vanamahotsava, inspired by ancient Indian traditions, is India's festival and is of great significance.

Trees adorn our homes, our cities and villages. They provide shelter to our farms and to our wild life. They afford restful shade and peace from the worries and turmoil of daily toil when we seek their healing presence in recreational parks and national reserves. Trees provide fuel, fodder, timber and fruit. As windbreaks and shelter-belts they help to protect field crops. The abundance or absence of tree crops have a direct bearing on industrial development, social progress and national strength.

In the Soviet Union

The Sixth Session of the Conference of the Food and Agriculture Organization of the United Nations realising the need of arousing mass consciousness of the aesthetic physical and economic value of trees recommended that a World Festival of the Trees be celebrated annually in each member country on a date suited to local conditions.

In the Soviet Union specially-bred fruit and berry trees, which support bees and birds, apart from increasing food and wine supplies, are planted even in the shelter-belts These trees are attractive to bees at blossom time and prove of wider interest than with reference to bee-keeping only. Such bees visit other flowers also and help in the wider incidence of cross-pollination in agricultural and other crops, which in turn leads to improvements in the quality and quantity of those yields.

In the U.S. and New Zealand

In New Zealand emphasis is given on planting of shelter-belts and of new highways, " the creation or preservation of the native silva " and increased attention to " aspects of social forestry, such as planting and preservation of amenity trees and food-producing trees, particularly bee trees ". In the United States, two new elements have been introduced into the Arbor Day plan—the day has been made a school festival and the practice of planting memorial trees and groves has been started.

In Iceland there is a Students' Afforestation Day Act by which tree planting is made compulsory on one day a year during school term and at a time when afforestation conditions are favourable. In the United Kingdom the Forestry Commission apart from providing the seedlings for Arbor Day planting ceremonies, also allocates plots of existing forest in various stages of development to schools who "adopt" them and are responsible for their care and maintenance. In Italy prizes are awarded to children who have given particular attention to the care of trees, and tours are arranged to observe the results obtained in other areas and in previous years.

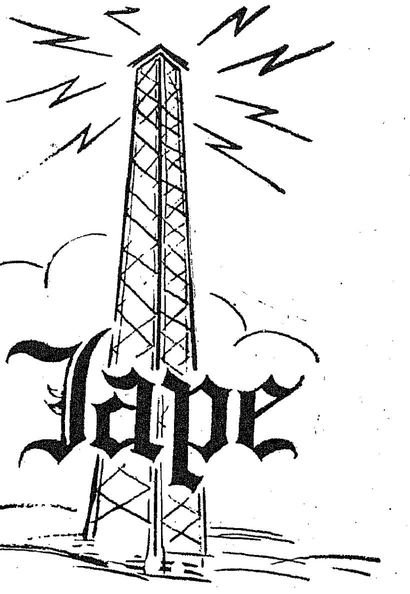
Vanamahotsava

In India the observation of Vanamahotsava is no longer considered a celebration or formality to be observed just for a day or a week but has been accepted as an act essential for present progress and as a symbol of faith in the future. Much more important than the mere act of planting trees, considerable emphasis is now being laid on the maintenance and after-care of planted stock. The Prime Minister has directed that no tree should be cut down unless there is no feasible alternative to it or it is inescapably necessary. Dr. Panjabrao S. Deshmukh, Union Minister for Agriculture, in a circular letter to the Chief Ministers of States two years ago stated that " one of the most satisfying things a man can do is to plant a tree. " He thus earns the goodwill of posterity. And when he rears, protects and helps the tree to grow into an asset in more ways than one, he ensures that good will in abundant measure.

Audio-Visual Aids for Schools

The National Advisory Board of Audio-Visual Education has recommended that the possibility of providing audio-visual aids to all schools in the country by collecting small contributions from students themselves be explored. The National Board, which met in New Delhi, set up a sub-committee consisting of eminent educationists, specialists and administrators, to advise the National Institute of Audio-Visual Education in the production of audio-visual aids including classroom instructional films. Members of the Board also suggested that educational films and film strips should be treated on par with text-books in so far as sales tax was concerned.

History on Disc and Tape



[This feature article by Dr. R. M. Marathey on the role of broadcasting in history is presented in connection with the Silver Jubilee of All-India Radio celebrated recently. The tape and disc recordings wherein the voices and personalities of the makers of the country's history and memorable national events in their authentic atmosphere are caught and preserved for the benefit of succeeding generations are described by the author as All-India Radio's historical archives. Future historians are likely to look for source material in these recordings in addition to the references that they may seek in other historical records and documents. Therefore, the author feels that these recordings provide history of a new type.]

Everybody is aware of the National Archives where invaluable records and documents of the nation's history are preserved. But few perhaps know of All-India Radio's archives consisting of equally invaluable material in the form of tape and disc-recordings which preserve for posterity the voices and personalities of those who made India's history.

There are voices of great men and great musicians and what is more, records of historic events cast in their authentic and original atmosphere, in which a whole nation has celebrated in joy her freedom or mourned in sorrow the loss of the greatest of her sons. This is history of a new type. History which needs no interpreter but which speaks for itself, speaks often through the mouth of those who shaped its events and moulded its course. A living, moving, inspiring history for future generations to hear and feel with the same warmth and spontanity with which those who made it lived and felt it.

Vivid Images

Here then they echo through the corridors of time these voices from the past, distant but not dim, bringing with them ideas and images as vivid and vital as did ever adorn the pages of history.

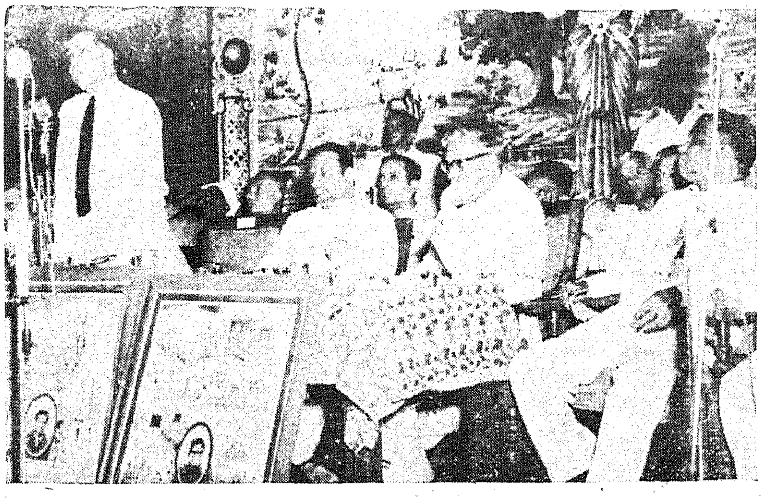
.... The historic session of the Constituent Assembly of India to which sovereign power was transferred on the midnight of August 14–15, 1947—' a day appointed by destiny' (Jawaharlal Nehru's words) with whom India ' had a trust '.

....The slow and halting progress of the State-Funeral of Mahatma Gandhi described in a moving commentary to a mourning nation which followed him to his eternal rest..........

....Pepsu and Greater Rajasthan have come into being and with it Sardar Patel's dream of integrating India—the first time in her chequered history—has gloriously come true. ' Today is a day in a century ' said he....

Birth of a Republic

....A Constitution is formed and implemented. In General Elections based on universal adult franchise a hundred and seventy million voters have chosen their



Sri H. V. R. Iyengar, Governor of the Reserve Bank, who inaugurated the Tamilnad Co-operative Conference at Kumbakonam recently is seen addressing the conference delegates.

representative. A new President has also been elected, and is sworn in while, through the radio, the whole nation acclaims him as the head of their Sovereign Democratic Republic..........

....The sacred relics of two of Buddha's disciples, Sariputta and Mahamogallana, are brought to Sanchi and deposited in a Vihar specially constructed for containing so precious a treasure..........

....The First Asian Conference is held in the historic Purana Qula of Delhi. Sarojini Naidu presides. Gandhiji calls upon the delegates to visit as many villages as they can to see real India........

Its Progress

....Also the Indonesian Conference—the first International Conference of its kind on the Indian soil. Herself free and independent, India extends a hand of friendship to other nations, still under the yoke of colonial powers....

....The President confers awards of merit on distinguished musicians from the North and the South.........

....The New State of Andhra is inaugurated by the Prime Minister amidst moving, memorable scenes.

....Water is let into the Nangal Canal; a new locomotive is put on the rails; there is a threat of famine or floods; a new ship is launched; a new national laboratory is opened; another national leader passes away; a new akademi' for arts or drama is inaugurated, andso it goes on. A new nation forges ahead, toiling, rejoicing, sorrowing. And All-India Radio close to the people, near to their hearts and souls, joins in their celebrations, condoles their calamities and all the while keeps a faithful record of the nation's activities–small or great, momentous or momentary of local, regional, national or international importance.

Thrilling Account

This is All-India Radio's contribution to the historian of the future. In the numerous recordings made and preserved of these great occasions, the historian of the future will find a thrilling account of great men and great events speaking aloud for him to hear and let others hear through him. All India Radio as a modern Herodotus recounting his epic adventures with the accuracy of a scientist and the art of a Homer. And often, stories retold by those who took prominent part in them; history in the first person singular.

Thus All-India Radio has nearly sixty hours of the recordings of the prayer addresses of Mahatma Gandhi which he delivered at Delhi day by day for five months before his death in January 1948. In this unique evidence posterity can feel and hear the momentous events in the first five months of a new nation's life, difficult months, crowded months, unforgettable months.

Tragic Trail

The celebrations in Delhi are hardly over when the tragic trail of millions of refugees starts moving into Delhi. Disturbances break out. Gandhiji, who is holding the Eastern front from a similar disaster, returns to Delhi from distant Noakhali in East Bengal. He finds Delhi 'a city of the dead'. He does not despair. Day in and day out he comforts the suffering, strengthens the weak and exhorts the strong to overcome this communal frenzy. At first his words fall on deaf ears. But he persists. Then slowly, imperceptibly he feels Delhi returning to sanity and normality. He rejoices. Undertakes his last fast. Talks of moving up to the frontier in the Punjab, now that his mission of peace in the capital has begun to bear fruit. There is a smile on the lips of the old, undaunted warrior. A light in his eyes. And then the terrible tragedy of his assasination falls like a bolt from the blue. Delhi is enveloped in darkness again. The light has gone out.

These and other events—India rushing to Kashmir's help (Gandhiji sees the planes flying overhead), the integration of States, Junagadh and Hyderabad—are preserved in these invaluable recordings of which the author is none other than the Father of this new stumbling, erring, recovering and marching Nation!

Tributes to Gandhiji

The moving tributes paid by a shocked and sorrowing world to this apostle of truth and non-violence are yet another precious possession of All-India Radio. 'Like a king' said Sarojini Naidu 'he died in the Capital'. The homage that was done to this man of the people, this saint, this yogi, would have been indeed the envy of any king or emperor. For it was not an empty crown that they honoured or lost. Rather they mourned the loss of one who was well and truely a father, friend and philosopher to them all.

The speeches of Sardar Patel are in these archives. No national monument could more fitly preserve the glory

and greatness of this man of destiny than these full, frank and free utterances in which he has bequeathed a rich legacy, the wisdom of a century to his countrymen.

Sarojini Naidu's Speeches

Sarojini Naidu, poetess, patriot, orator, a devoted disciple of Gandhiji (one of her records is entitled 'Bapu, the Micky Mouse') also lives with her song and musical speech in a cosy corner of this house of fame.

Besides the past dead the living present also finds niches in the All India Radio archives. Thus are recorded and preserved almost all the important speeches of our Prime Minister. Important pronouncements like the decision to create Pakistan, messages from national and international leaders—Ramon de Valera, Chou En-lai, Tito, Eisenhover, Rajendra Prasad, Eleanor Roosevelt, Krushchev, Clement Attlee, Mohamed Ali Jinnah, Crown Prince of Japan..........to mention only a few, have also been recorded and are preserved.

Music of the Masters

Yet another section of the archives is reserved for the recordings of great musicians—past and present. Thus the music of Ustad Faiyaz Khan or of T. N. Rajaratnam Pillai will live for a hundred years for their pupils and admirers. So will be preserved through special recordings the beat that is in each of the current musical schools and traditions.

Just imagine if only the music of Tansen or Thyagaraja was thus preserved! If only the famous Gettysberg speech of Abraham Lincoln could be heard today: "Dedicated to the principle that all men are born equal".

Scholarships for Teachers' Children

The Government of India have decided to award 500 Post-Matric Merit Scholarships every year to the children of Primary and Secondary School teachers in the country. The first of these awards will be made during 1961 on the results of the School-leaving examination (High School/ Matriculation/Higher Secondary/Senior Cambridge, or other School-leaving examination) held in March-April 1961, and only those who have appeared in these examinations in 1961 will be eligible (except in the case of Senior Cambridge, for which the examination held in December 1960, will be taken into account).

Only those candidates will be eligible to apply who have obtained at least first Class or where there is no Class or Division, at least 60 per cent marks in the aggregate in the school-leaving examination.

Intending candidates for these awards may obtain full information from the relevant authorities of the State Governments and the Union Territories, viz., Inspectors of Schools, Directors of Public Instruction/Directors of Education. Applications must be submitted direct to the State Governments within 30 days from the date of the announcement of the scheme by the State Governments.

Parambikulam-Aliyar Project

SRI U. ANANDA RAO, *Special Chief Engineer, Parambikulam–Aliyar Project.*

[The Chief Minister, Sri Kamaraj, recently declared open the bridge below the Parambikulam Dam and inaugurated the masonry work on the Dam. The Special Chief Engineer, Parambikulam-Aliyar Project, welcoming the Chief Minister and others, referred to the keen interest taken by Government in the promotion and execution of irrigation and power projects and to Government's appreciation of the role of these projects in stepping up the tempo of food production and industrialisation in the State. He made use of the occasion to give an account of the project. This article carries the substance of his account.]

The Parambikulam-Aliyar Project is a mammoth multi-purpose project of Madras State included in the Second Five-Year Plan. It is designed to utilize the water and power potential of some of the west flowing rivers, such as Nirar, Sholiyar and river Parambikulam which have their sources in Anamalai Hills of Madras State, but flow through Kerala State and empty themselves into the Arabian Sea. Dams will be constructed across the rivers at suitable points and the reservoirs thus formed will be interconnected through tunnels. This water will be brought from the highest reservoir across Nirar to the lowest reservoirs across Aliyar and Palar, from which canals take off for irrigation.

A view of the delegates who attended the Tamilnad Co-operative Conference at Kumbakonam.

The Project envisages construction of seven reservoirs one across each of the rivers Nirar, Sholiar, Parambikulam, Tunakadavuz, Thekkadi, Aliyar and Palar. The flows of the first river, Nirar, together with surplus of Sholiyar, after satisfying the power needs of Kerala, will be stored in Parambikulam reservoir. Masonry for this reservoir was inaugurated recently. This is a key reservoir in this scheme, receiving waters from several rivers above for diversion to the hungry and dry plains on the east.

Mutual Benefit

Parambikulan, Tunakadavu and Thekkady reservoirs are located in Kerala State. This is an inter-State Project, which is of mutual benefit to both the States of Kerala and Madras. The project not only stabilizes the existing irrigation in Chittoor area of Kerala but also guarantees sufficient water for successful generation of electricity in all years from the Sholiyar Reservoir. This inter-State Project has been taken up with the full consent and active co-operation of the Kerala Government.

Negotiation had gone on between the two Governments for some time and under the able guidance of the late Sri Govind Vallabh Pant, Home Minister of Government of India, an amicable settlement was reached. The project will irrigate an extent of 240,000 acres in the dry and arid

regions of the Coimbatore district, and will produce power with an installed capacity of 180,000 K.W.

Dam Masonry

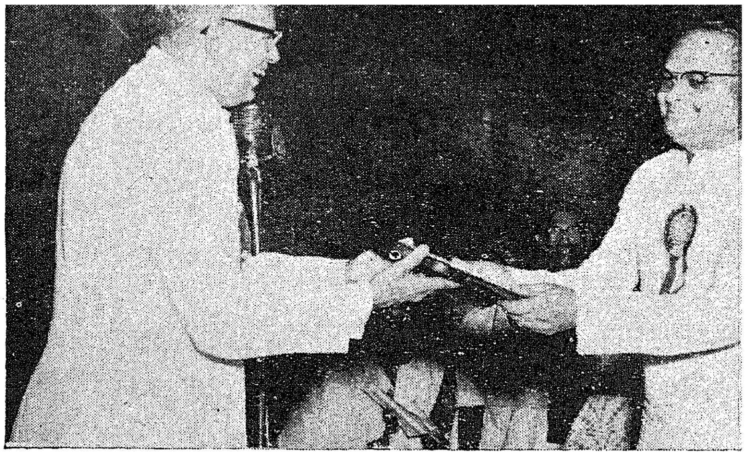
The Parambikulam Dam masonry will be straight gravity dam 180 ft. high from the river with a top width of 18 ft. and maximum base width of 160 ft. The length of the masonry dam is 1,000 ft. in the river and that of the earthen dam is 1,800 ft. at the left flank saddle. Surplus weir consisting of 3 spans of 42 ft. will be located at the centre of the masonry dam. Though the Reservoir has a gross capacity of 16,500 m.cft. live storage will be in the order of 9,000 m. cft. only.

The bridge across the Parambikulam river below the dam has been completed and besides giving access to the works on the left flank, it forms an important and useful link between Madras and Kerala. The bridge consists of 5 spans of 30 ft. The piers and abutments are of random rubble in cement mortar 1 : 5 with hammer-dressed stone facing. The cost of the bridge is Rs. 2·25 lakhs only.

The Second stage

Preliminaries connected with the Project were started in 1958. Constructing quarters for the staff and workers, laying of new roads, improving existing roads, erecting power lines, excavation of foundations for the dam, have all been completed and the first stage of the work is over and a start is being made in the second and important stage, viz., construction of masonry for the masonry dam.

The expenditure incurred on the project during the last two years is nearly Rs. 4 crores and almost an equal sum is proposed to be spent during the current year (1961–62) which is the first year of active construction. The annual expenditure from the next year onwards (1962–63) will be in the order of Rs. 5 crores and the project work will virtually be completed by the end of the Third Five-Year Plan. Work on the Aliyar Dam (one of the seven dams of the Project) is in full swing and will be completed by July 1962 when water will be let down for irrigating an extent of about 20,000 acres.



Sri R. Venkataraman, Minister for Industries, giving away an award to a representative of the Salem Co-operative Central Bank which was adjudged one of the best co-operatives in the State.

Phased Programme.

The programme for other works will be so phased that reservoirs and canals that give early benefit are taken up and completed first. All canals together with distributaries and field bothies will be completed along with the dam and diversion works and there will not be any time lag between the creation of water potential and actual utilization of it by the riots.

In view of the peculiar nature of the project in difficult terrain many day-to-day problems arise during execution. To tackle them with the least possible delay and to see to the speedy execution of the works, the Headquarters of the office of the Special Chief Engineer was shifted from Madras to Pollachi. This shifting of the office of the Special Chief Engineer from Madras and that of the Superintending Engineer, Parambikulam-Aliyar Project Circle, from Amaravathinagar to Pollachi was with a view to facilitate quicker inspection of the works by the Chief Engineer and the Superintending Engineer and speed up communications of instructions and decisions to the field officers, so that the execution of the Project works will be characterized by utmost speed and efficiency.

Tourists to India

Over one lakh twenty-three thousand tourists visited India last year. This was an all-time record and marked an increase of 12·5 per cent over the figure for 1959. Of these, those who came from Europe numbered 37,107 ; from South, East and South East Asia, 32,551; from U.S.A. and Canada, 28,678 ; from Africa, 14,389 ; from West Asia, 6,771 and, from other countries, 3,599. These statistics reveal a strong growing trend among U.S. nationals to visit India. Those from the U.S.A. constituted the biggest single category.

TUBEWELLS AID Farm Production

SRI. K. VARADACHARI, *Retired Joint Director of Agriculture.*

[*From the time that the happy idea of the tubewell originated in the South sometime in'* 1951, *it has caught on and the filter-point tubewell has been increasingly commissioned for farm operations in the State during summer and fields that originally lay fallow during the time are used for the cultivation of cotton, vegetables, groundnuts and early paddy nurseries. This article reproduced from ' Yojana ' gives an account of the history of the filter-point tubewell in the State.*]

In 1951 Mr. K. S. Vengu Chettiar, a farmer at Mayuram, Madras State, was faced with a problem. Water was not yet available from the river channels for his summer crops, his paddy nursery and his vegetable gardens. He hit upon the idea of installing a small tubewell. With the help of an oil engine and pump he was able to go ahead. The State's Director of Agriculture saw the tubewell, and, as a result the whole outlook for summer cultivation in the State changed. Mr. Chettiar's example was taken up in many localities in the then undivided Madras State, particularly in Andhra Pradesh and the West Coast. By enabling summer cultivation, land and labour were put to more intensive use and profit. The fields which were once fallow were now dotted over with one-room structures housing oil engines or electric motors for irrigation from filter-point tubewells, helping the growing of cotton, vegetables, groundnuts and early paddy nurseries.

The Experiment

In the Kaveri delta in Thanjavore district, the land lies fallow from January-February to June—between the harvest of the main paddy crop and the next season's first crop of short-duration paddy. The stiff clay soil cracks in the summer heat and moisture. The problem of growing a green-manure crop suitable for most of the delta area as well as putting the land to maximum use appeared till recently to rest on the availability of water for irrigation. The solution was found in shallow tubewell irrigation.

The possibility of installing such tubewells—known as filter-points—all over the Thanjavore delta became clear at once. The Agricultural Engineer of Bapatla (now in the Andhra State) devised equipment that could be easily made and operated by the farm-hands after a mere three days' training. It consists mainly of a worm auger to bore holes in the soil, a sand shell or baler to take out the soil and another material from out of the bore hole and a tripod of casuarina posts, pulley and clamp, required for the rig. In December 1951, the Government sanctioned a scheme for the installation of 10 tubewells in the Thanjavore delta. The enthusiasm of the cultivators was so great that the target was easily exceeded.

At first the filter-points had to be procured from outside the State. But local production was soon encouraged and the Ex-Servicemen's Co-operative Metal Works Society, Kumbakonam, began manufacturing the filter points. Starting at a rate of manufacture of one per week, the Society gradually met the increasing demand from all over the State, making six to eight filter points per day.

The scheme was extended to other districts in the composite Madras State. The actual cost of the filter-points and sinking was recovered from the 'ryots' so that the whole project became self-supporting. Loans up to

Rs. 2,500 were granted to each cultivator in the shape of pumping machinery for the filter-points on hire-purchase basis. Loans up to Rs. 400 were also granted for the actual cost of each installation, including working charges and cost of pipes and filter points. During the First Five-Year Plan, 2,671 filter points were installed at a cost of Rs. 58 lakhs. The provision made in the Second Five-Year Plan is for 600 filter-points each year.

Special Advantages

In the Southern States there are three sources of irrigation—rivers, tanks (or ponds) and wells. Generally wells are 25 to 30 feet deep, with a diameter of 15 to 30 feet, and provide a large area for percolation. In the soils which hold large quantities of water, there is a plentiful supply for pumping by oil engines or electric motor. In the deltaic areas the top soil is clayey and does not hold enough water for irrigation. But below this clayey level, in the sandy layers deeper down, there are perennial supplies of water at depths varying from 30 to 120 feet. Digging wells to such depths is difficult and expensive. The filter point is therefore an easy and cheap device for tapping such supplies. This had not been considered possible until the Director of Agriculture at that time, Mr. M. S. Sivaraman, in 1951 demonstrated its practicability.

The filter-points can now be installed down to any depth. When the water from below rises up the tube to a few feet from ground level, it is pumped out by an oil engine or electric motor. During the course of pumping, the water level in the pipe would go down but so long as this remains within a range of 25 to 28 feet from ground level, pumping with the ordinary centrifugal pumps becomes easy.

Improvements

The usual filter point is of the wire-mesh type. It consists of a six-foot-long pipe, three or four inches in diameter with holes of half to three-fourth inches wide, drilled one to one and a half inches apart for a five-foot length of the pipe, leaving half a foot at top and bottom. The holes in the consecutive layers are staggered for strength. The holes let in water into the tube-well, and to prevent sand particles coming in, the holes are covered with 60-guage-strong brass or copper wire-mesh. The mesh is protected by a perforated brass or galvanized iron sheeting of 27 guage soldered on to the mesh. A solid octagonal pyramid of cast iron shoe is fixed to the bottom of the pipe. A length of piping is used over the filter point until the ground surface is reached. The whole assembly consisting of filter-points and the pipe is called the filter-point tubewell.

Investigations have been made for lowering the cost of the filter-point. As a result of trials, a coir filter-point was evolved in 1954. The coir filter serves the same purpose as the wire-mesh filter in filtering water in a sandy stratum and letting in clean water into the tube. Iron pipes are not required : instead a cylindrical cage is made of iron flats and the coir is wound over this. This has the further advantage of having a larger pore area with the resultant increase in yield of water. This is also found useful in places which are not very sandy. The coir filter-point lasts longer and costs about a fifth of the wire-mesh filter-point. It can easily be made even by village blacksmiths. Yield trials have shown that the coir filter-points yield 15 to 25 per cent more water than wire-mesh filter-points.

Increased Production

At first three-inch filter-points were installed at depths ranging from 30 to 40 feet. By using an oil engine of five to seven horse-power or an electric motor of five horse-power with a three-inch pump, 8,000 to 10,000 gallons of water could be pumped out in an hour. In some parts of the Kaveri delta like Thanjavur, Tiruchirappalli and parts of South Arcot district, Kolinji (or wild indigo) is grown for green-manuring of paddy. Kolinji, being unsuitable for the heavy soils, would yield about 2,000 lb. (or two cart-loads) of green manure per acre. This quantity is not enough for a paddy crop that requires a minimum of 5,000 lb. of green manure. Thus, for an inadequate supply of green manure, the farmer had to utilise his entire paddy area for growing Kolinji in the offseason. But a farmer with a holding of ten acres and a filter-point can now completely change his system of cultivation.

After the harvest of paddy in January or February, up to the time of planting his first crop of paddy in July, he can grow eight acres of summer crops like irrigated cotton, groundnut, millets and vegetables. One acre can be set apart for raising paddy nurseries and in the other acres Sesbania Speciosa can be grown on a field scale by sowing in the field prior to the harvest of paddy. This crop of Sesbania Speciosa, when allowed to grow till June with the help of summer showers only, will grow tall and luxuriant and yield enough green leaf for manuring all the ten acres adequately at the rate of five cart-loads per acre. The farmer can thus get a plentiful supply of green manure for all his lands without having to use the entire area for only this purpose. At the same time he can raise early paddy nurseries with the help of irrigation from the filter-point.

Early Completion

The raising of early paddy nurseries in areas commanded by irrigation projects is of very great value to the paddy farmer since he can advance the cultivation by

about three weeks by having the seedlings ready for planting by the time water is received in the channels. The early-grown first crop of paddy (Kuruvai) always gives higher yield. It is likely to escape the insect pests that usually appear at the harvest time of the later planted crops. Again, the advance of the first crop results in the advancing of the second crop as well. Normally about a fifth of the paddy area in the Kaveri delta is under double-crop cultivation. If the first crop is delayed, the harvest of the second crop also is delayed, so that at the fag end of the season, in order to help the maturing of the crop in different stages of growth, one-fifth of the delta requires to be provided with water, much of which is necessarily wasted in the remaining four-fifths as well. Thus the reservoir gets unnecessarily depleted and such depletion after a poor rainfall, causes difficulty in summer for hydro-electric supplies and also puts off the opening of the reservoir for the next season till sufficient storage is received. Thus an early opening of the reservoir is a corollary to a uniform completion of the growing period of the second crop of paddy and early closure of the reservoir. Therefore, to the extent to which ' ryots ' advance cultivation of the first crop, the paddy cultivation is completed early and with good yields. Also the longer interval in summer is beneficial to crops like cotton.

In the Kaveri, Godavari and Krishna delta and the Palar basin, underneath the clay or loam surface, there are stretches of sandy subsoil, which like a great sponge holds up immense quantities of water. This supply is annually replenished from freshes in the river. By boring into these water-bearing strata and installing filter-points, it would be possible to tap the vast underground supplies to advantage. A filter-point can be installed in a couple of days at a cost of Rs. 500 much cheaper than a well.

New Appliance

The installation of filter-point does not require much technical skill. The equipment, as described earlier, is simple. The first layer of clay is screwed out by means of the auger, a bigger-size casing pipe is introduced and then lowered by degrees by removing the clay inside till sand is struck. From this depth the sand shell is used to deepen the bore until the water stratum is struck. Then the filter-point is let in with the necessary length of pipes and the casing pipe removed.

A cheap appliance by which the filter point can be worked by a pair of bullocks has also been evolved. This yields 25 per cent more water. Even a small farmer can instal a filter point in his holding and use his bullocks for working it without going in for an oil engine. A vast area of land can be cultivated in summer if only there is supply of water. The filter-points provide this supply in many places and it is up to the farmer to put his land to its maximum use.

Encouraging Handloom Co-operatives

The Union Government have decided to continue to encourage co-operatives in the handloom industry during the Third Plan as recommended by the Working Group on the Handloom Industry. At the same time, the centre has expressed the hope that State Governments will carefully consider the working group's recommendation to assist weavers outside the co-operative fold. Government have also accepted in principle the suggestion that the share capital of existing societies should be increased and that dormant societies should be revived. About the credit requirements of Weavers' Co-operative Societies, Government feel that it should be obtained through the Reserve Bank and other institutional agencies. These agencies will be requested to help the smooth flow of credit to co-operatives.

Small Scale Industries For Prosperity

S. MUTHIAN, *Deputy Director of Industries and Commerce* (*Small-scale Industries*).

[*In an industrially under-developed country with an economy that is predominantly rural, striking the right balance between large-scale and cottage industries assumes enormous importance since the twin objectives of effecting a wide dispersal of industry and creating large employment potential to provide jobs for the vast number of unemployed have to be achieved. A wide diffusion of small-scale industries has been recognized as an efficient means of bringing about the desired result. The development of small-scale industries in Madras State is traced in this article.*]

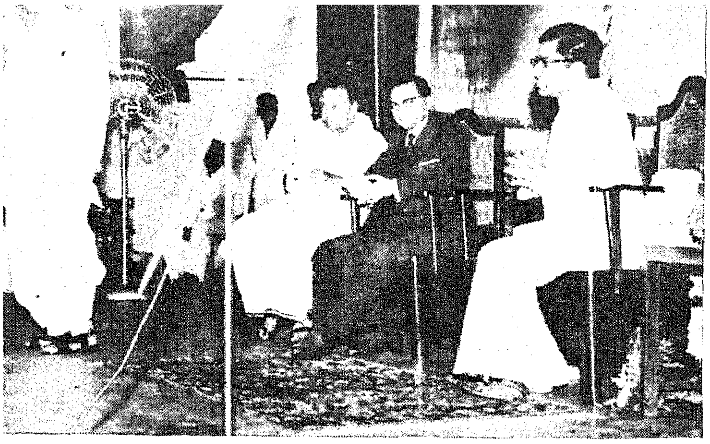
The bulk of the population in India lives in villages and in small towns and most of them depend on agriculture for their livelihood. The agricultural industry is the largest industry in this country. But agriculture however does not provide wholetime employment to the vast majority of people and large numbers migrate to urban areas, year after year, in search of employment during the period when they are free from agricultural pursuits. Therefore, the emphasis has rightly been shifted from agriculture to industry from the Second Five-year Plan period.

The need for well-planned industrialization as the most vital course of economic activity to stabilize not only the agricultural economy of the country but also other economic factors is being increasingly recognized on all sides. If the standard of living of the common people is to be raised and if the cherished objective of a socialistic pattern of society is to be achieved, the benefits of economic development should accrue more and more to the relatively less privileged classes of society. A well-balanced, integrated, decentralized industrialization offers the best solution to achieve this desired result.

Urban concentration

Industries in India are mostly concentrated in big cities. The periodical exodus of vast numbers from rural to urban areas gives rise to complicated problems in regard to housing and primary service facilities like water, sanitation, electricity in the urban areas. While the urban areas are faced with fresh problems, the progress of development in rural areas also suffers due to the exodus. Considering these problems, greater emphasis had to be laid on the establishment of small-scale industries. The development of small-scale industry is an important factor in the wider distribution of both economic activity and advantages. The Government have, therefore, adopted the policy of supporting these industries by restricting the volume of industrial production in the large-scale sector by differential taxation, by providing subsidies, etc.

By decentralizing production, artisans are enabled to work in their houses and produce articles at a cheaper cost and supply to established industries. There is also the complaint that on account of decentralized production artisans have to work overtime without facilities and under unhygienic conditions. These are problems that require careful consideration and tackling. Since man is more important than the machine, it has to be ensured that the changeover from outmoded equipment to up-to-date machinery is phased in such a manner as not to aggravate the unemployment problem.



Dr. Keskar, Union Minister for Information and Broadcasting who inaugurated a programme of Children's films in the City recently is seen addressing the audience at the Children's Theatre.

The principal needs of small-scale industry are training and technical advice regarding the adoption of improved tools, machineries and new techniques, supply of raw materials and power at reasonable rates, supply of adequate finance on fair terms, facilities for importing or purchasing new machines, provision of factory space to enable small entrepreneurs to conserve their limited resources for working expenditure and of servicing facilities in operations involving the use of expensive machinery and assistance in the marketing of products. To fulfil these basic needs, several schemes sanctioned under the Second Five-Year Plan by Madras State are under implementation.

Five Tool Rooms at Guindy, Erode, Pettai, Virdhunagar and Tiruchirappalli were established at a cost of Rs. 35·27 lakhs. In the Tool Room Shop at Guindy, servicing work, in precision grinding, jig boring, etc., and in the supply of special tools, jigs, fixtures, dies, etc., for the benefit of 230 small-scale industries was undertaken during 1960–61. The Tool Room not only supplied some of the dies and special tools hitherto imported but also enabled private units to produce quality goods at cheaper cost and supply them to large-scale industrial establishments.

Designing Section

As there are no organizations in the Madras region, either in the private or the public sectors in designing dies, jigs, fixtures, specialized tools, etc., a designing section was also set up to work in conjunction with the Tool Room. In view of the popularity of these tool rooms, three more units were sanctioned during the end of 1959–60 in the Industrial Colonies at Pettai, Virdhunagar and Tiruchirappalli. Fifteen Common Service Facility Workshops at Madras, Dindigul, Tiruchirappalli, Kumbakonam, Palni, Madurai, Guindy, Perambur, Pallavaram, Vinnamangalam, Guindy, Pollachi, etc., were established at a total cost of Rs. 92·83 lakhs. All the fifteen Common Service Facility Workshops have gone into regular production work. During last year up to the end of 1960, servicing work to the value of Rs. 20·00 lakhs was turned out in the fifteen workshops which had started functioning for the benefit of about 800 small-scale industrialists.

Service Workshops

These Common Service Facility Workshops come under two categories—one for the benefit of organized private small-scale units and another for artisans. Two workshops under the former group such as the Service Centre at Wall Tax Road, Wood Working Unit at Guindy, etc., have made rapid progress and are already functioning on a self-supporting basis. In the case of the latter group such as the Lock Unit, Dindigul, Brassware Unit, Kumbakonam, etc., as the artisans are conservatives and do not take to improvements and new ideas quickly, the progress has been comparatively slow. Consequently, subsidized servicing rate, continue to be charged. Further, to obviate the difficulties involved for these service centres in their dealings with individual artisans, Industrial Co-operatives of artisans have also been organized.

Specialized machines

Apart from the normal types of service centre, a Common Lease Shop was also set up in the Industrial Estate, Guindy, with T.C.M. Aid. Here, specialized machines are hired out to industralists along with Government workmen. A committee consisting of both official and small industrialists has also been constituted for managing this shop and for leasing out the machines to the various industrialists.

Eighteen pilot production units at Mettur, Rajapalayam, Vellore, Thanjavur, Triplicane, Erode, Tiruvottiyur, Guindy, Vriddhachalam, Sivaganga, etc., at a total cost of Rs. 97·65 lakhs were established. All the 18 pilot production centres have gone into production.

Technical Aid

In the factories that have gone into production, articles to the value of Rs. 12·00 lakhs were produced till the end of 1960 and these included galvanized structurals, pressure die cast parts, ferrous castings, splints and veneers, centrifugal machines, hospital equipment, bolts and nuts, cycle parts, sheet metal articles, L.T. insulators, etc., required mostly for industrial establishments as also a few consumer goods such as footwear, sanitaryware, etc. Technical aid in the forms of technical experts and technical information was given under a scheme costing Rs. 48·50 lakhs. Six training and demonstration classes at Guindy, Pattamadai, Krishnagiri, Pettai, Cuddalore and Mannargudi at a cost of Rs. 19·00 lakhs were established. Five social welfare schemes at Perambur, St. Thomas Mount, Vellore, etc., were started at a cost of Rs. 11·00 lakhs. Besides establishment of sales depots for marketing at a cost of Rs. 2·65 lakhs, financial assistance to the tune of Rs. 127·00 lakhs was given.

The establishment of industrial estates and rural community workshops was one of the means adopted by the Government to meet the serious handicaps faced by small-scale industries. Even during the First Five-Year Plan period the need for establishing industrial estates in India with reference to the planned growth of small-scale industries was felt. It has been realized that establishment of industrial estates, particularly in rural areas, could be an effective method of fostering industrial development on a decentralized pattern. It could also help in relieving congestion in big cities and in clearing the slums.

Dispersal of Industry

In the United Kingdom, industrial estates were used in pursuance of the Government policy, of dispersal of industry to comparatively under-developed areas with a view to reducing unemployment and to bring under-developed areas on a par with developed areas. In India, the problem of unemployment has been far more acute. In rural areas, the position has been the worst. Dispersal of industries to the under-developed areas in the country by establishing industrial estates therefore became vitally important. The object in starting industrial estates in the country has been to foster actively the development of industry and to use the medium of industrial estates for dispersing industries to rural and under-developed areas in order to raise the levels of living.

Estates and Colonies

Commencing from last year, for the first five-years, eight industrial estates at a cost of Rs. 180 lakhs at Guindy, Madurai, Tiruchirappalli, Erode, Pettai, Thanjavur, Virudhunagar and Marthandam were established during the end of the Second Five-Year Plan. Under the scheme for industrial estates and colonies, which is intended to provide factory space at a reasonable rent to small entrepreneurs with a complete range of industrial services, 245 sheds were leased out on subsidized rent.

The attempts to support and stabilize existing small-scale industries and set up new small-scale industries have obtained encouraging results. Therefore Government have laid greater emphasis in the development of small-scale industries in the Third Five-Year Plan also. Madras State has an ambitious programme costing Rs. 1,120 lakhs for the development of small-scale industries in the Third Plan.

Different Schemes

Government have proposed to establish schemes of different nature and type like common service facility units, common lease shops, forge and heat treatment shops, saw mills and wood working units, expansion of existing tool rooms, establishment of five general purpose engineering workshops and setting up of new foundries, establishment of gigantic structural workshops, testing shops, and establishment of training units for die sinking, forging, machine shop, die designing, die making, ceramics, wood working, etc. It is also proposed to spend about 127 lakhs towards financial assistance in the form of State aid for individual cases and Rs. 170 lakhs through industrial co-operatives.

Synthetic Stones

Besides construction of worksheds for synthetic stones in Tiruchirappalli district, for smithy and carpentry in Tirunelveli district and for fabricators at Madras, it is proposed to establish industrial estates at Theni, Koilpatti, Pudukkottai, Karaikudi, Arkonam, Tuticorin, Dindigul and Ambattur, etc. Functional industrial estates, one for leather at Perambur and another for ceramics at Vriddhachalam, are proposed to be established during the Third Plan period.

Although the above schemes are implemented departmentally, several small-scale industries newly started by several enterpreneurs have grown up due to the liberal assistance of the State Government by way of granting State-aid loans, machines on hire-purchase, providing indigenous raw materials, assisting them in import of raw materials and finding market for their product.

Numerous products

Both inside the industrial estates and outside, hundreds of factories have developed recently, all manufacturing a wide range of products like oil circuit breakers, high

Finance Minister Subramaniam who presided over the programme of children's films, presenting Government prize bonds to actress Ragini for participating in children's films.

voltage group switches, air break switches, underground cable joints, precision cut gears, industrial gear boxes, gear pumps, radios including transistor radios, amplifiers, volume controls, bicycles, wire nails, panel pins, electrical washing machines, film projectors, lamp sheds, soap boxes, tin containers, spectacle frames, builders' hardware, industrial belting, precision ground components for automotive engines, tube-light fittings, galvanised parts, die cast parts, motor pump parts, conduit pipes, paper pins, gem clips, automobile parts, mathematical instruments, index files, screw drivers, roofing hooks, H.T. accessories, railway parts, bolts and nuts, rivets, hinges, washers, wire mesh, drop forgings, corrugated paper and boxes, metal spraying, sheet metal work, brass foundry, copper conductors, P.V.C. wires and cables, thin walled engine bearings, typewriter parts, diesel engine parts, pressed tools, polythene films and bags, fountain pen parts, water-proof and coated paper, lathe circular saw machine, light structurals and several thousand other items.

Self-Sufficiency

During the Second Five-Year Plan, all these small-scale industries under the control of the department in the industrial estates and outside industrial estates have produced machine accessories and new products to the tune of Rs. 10 crores. After the implementation of the schemes in the Third Five-Year Plan, it is hoped that not only will the production in the small-scale industrial sector have increased and the unemployment problem solved but also that Madras State would become self-sufficient in respect of small scale industries. When this comes, about the contribution that Madras State would have made to increased production in light engineering industries in the country and to the savings of foreign exchange will be very valuable.

Surgical Fellowships

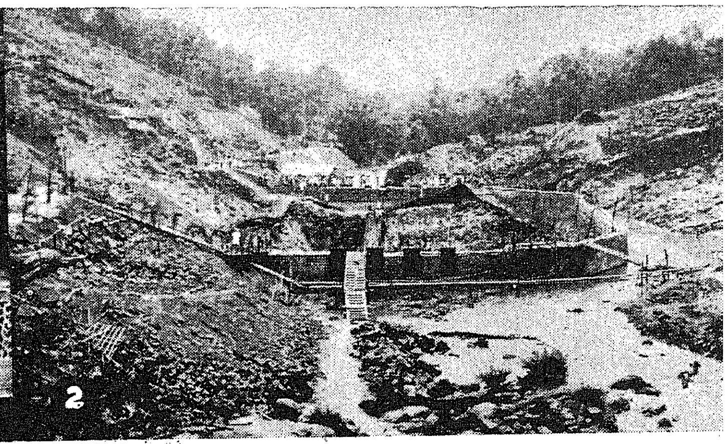
One of Britian's leading medical houses, Smith and Nephew Associated Companies Limited, is offering six surgical fellowships to selected medical graduates from Commonwealth and other developing countries. The fellowships are worth £1,200 a year and are tenable only in the United Kingdom. They will be available in any branch of surgery or associated research.

The awards are being established so that outstanding graduates can "further their education to the benefit of their individual countries", and candidates must undertake to return home to practice within a year of completion of their studies.

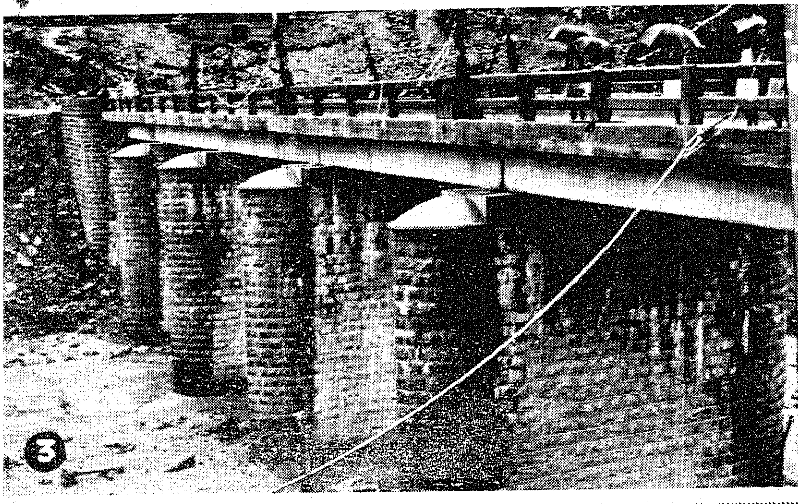
The fellows may be of either sex and must hold a medical qualification registerable in Britain and have at least two years general clinical experience since registration. Application forms, which must be completed and returned to the United Kingdom by July 31, are obtainable from the Secretary, Smith and Nephew Associated Companies Limited, 2, Temple Place, Victoria Embankment, London, W.C.2.

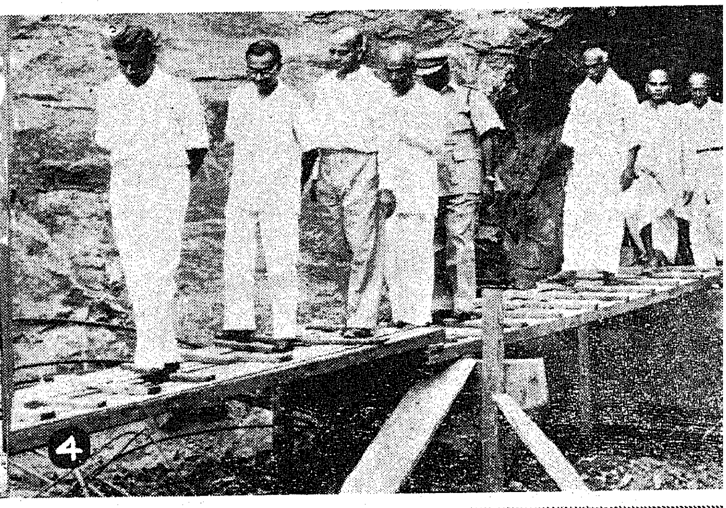
FACING PAGE—

(1) Chief Minister Kamaraj inaugurated the masonry for the Parambikulam Dam recently.
(2) The Parambikulam Dam site.
(3) The Parambikulam Bridge which was opened by the Chief Minister recently.
(4) The Chief Minister and others proceeding to inspect the Aliyar Project site.
(5) The Chief Minister with workers at the Aliyar Project site.
(6) A view of the Aliyar dam now under construction.

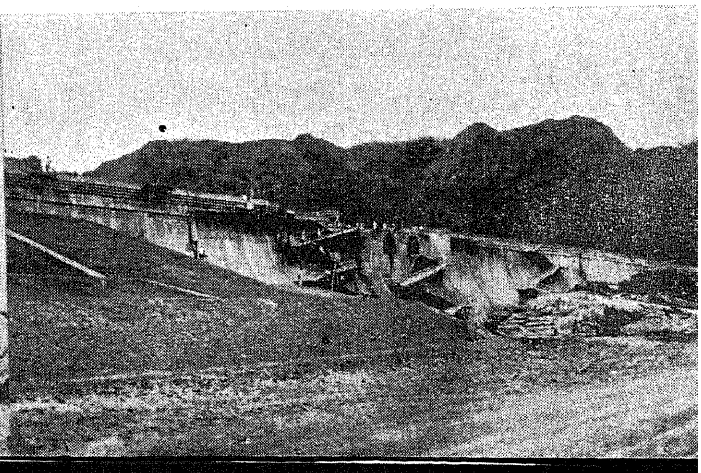


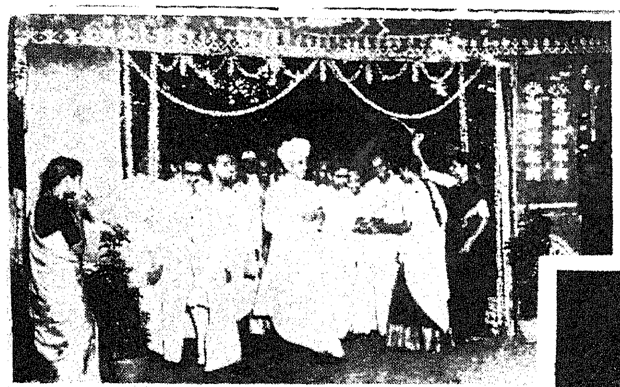
THE PARAMBIKULAM-ALIYAR

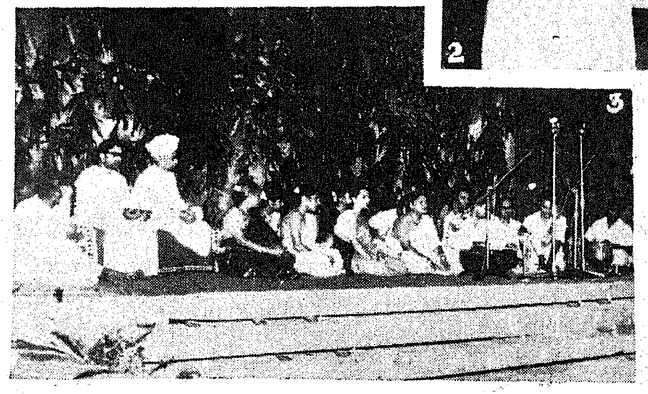


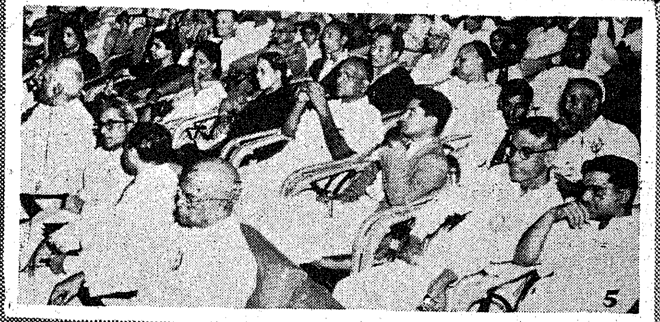


PROJECT

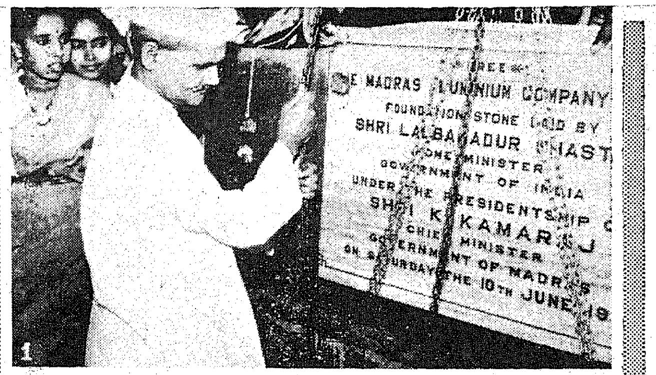


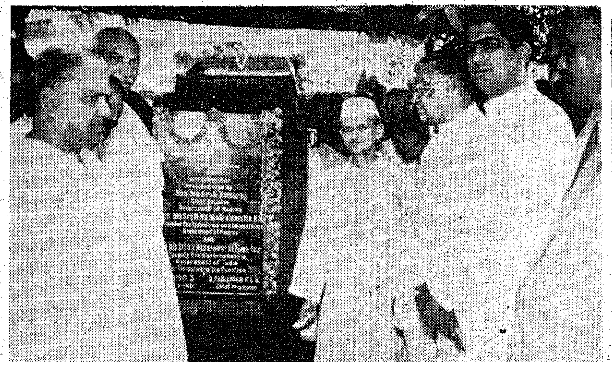


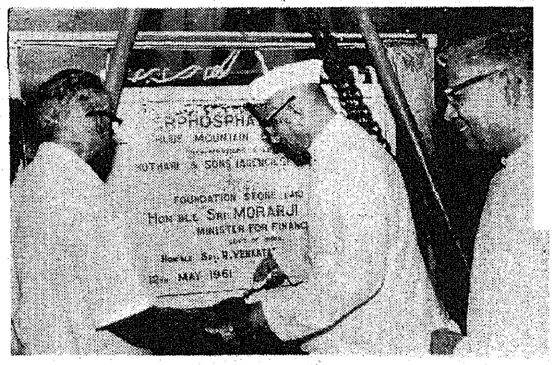




(1) Vice-President Radhakrishnan who inaugurated the Tagore Centenary celebrations at the Rajaji Hall recently being received on arrival. (2) Formally releasing set of books on Tagore during the function. (3) Rabindra Sangeeth. (4) Group dance number. (5) The audience (6) A scene from the dance-drama staged on the occasion

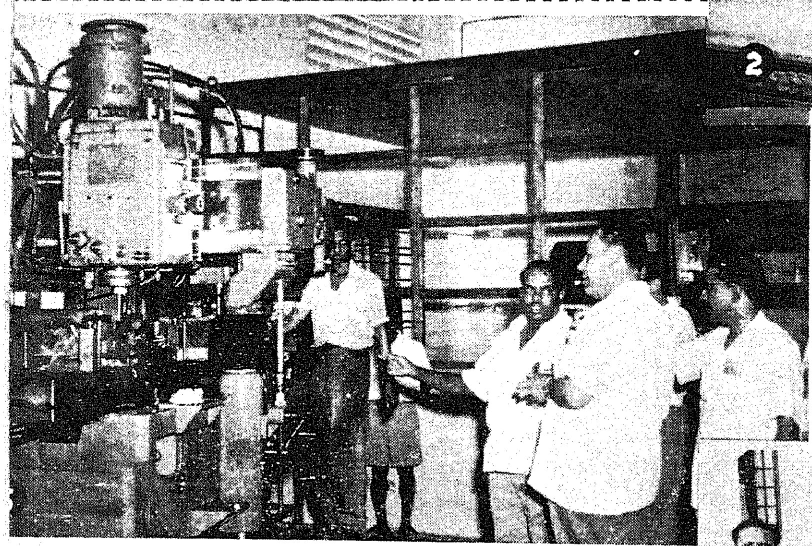




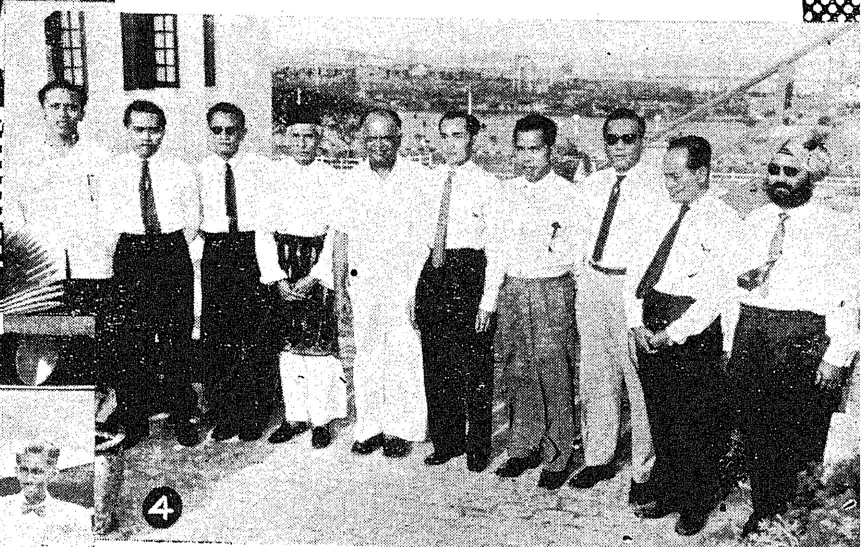


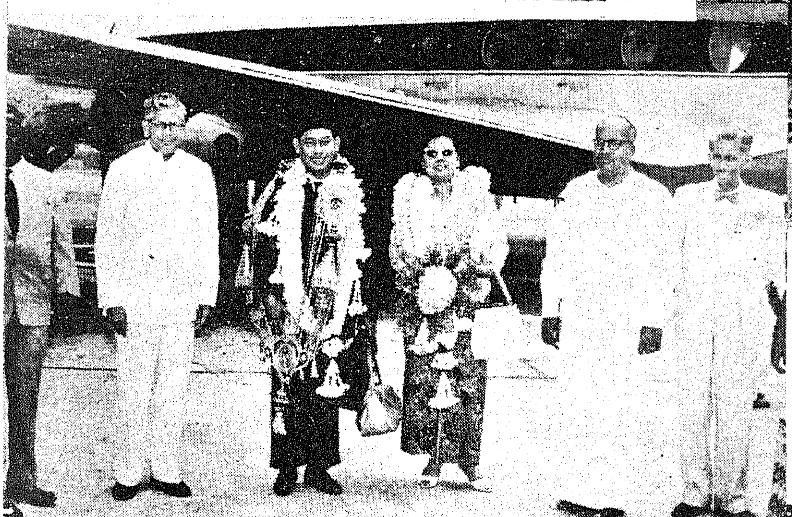
(1) Union Home Minister Lal Bahadur Shastri who fullfilled a number of engagements during his recent visit to the state is seen laying the foundation stone of Madras Aluminium Company, Ltd., at Mettur Dam. (2) With Chief Minister Kamaraj who presided. (3) and (4) Foundation stone laying ceremony of the Salem Co-operative Spinning Mills, Ltd., by the Union Home Minister. (5) Union Finance Minister Morarji Desai laying the foundation stone of the Superphosphate Factory at Ennore, recently.

Distinguished



Foreign





Visitors

ELIMINATE The Common Fly

[This feature article on the fly problem released in connection with the "Anti-Fly Week" being celebrated this month explains the life cycle of the common house fly and feasible control measures. Also included in the article is a short note on Maternal and Child Health Services in the State]

The common house fly though harmless to look at, is in fact a dangerous insect spreading diseases such as dysentery, diarrhoea, typhoid and cholera. Lakhs and lakhs of people die all over the world owing to the transmission of diseases by the apparently harmless common house fly.

Human fæces, cattle dung, gargbage, rubbish and filth are their dwelling places as well as choice dishes. The habits of flies compel them to pick up disease germs from sores, ulcers, stools, etc., and carry them to man. The more opportunities they have of coming into contact with man, especially with his food and drink, the more is the potential danger. Their feet with bushy hair growth (which you can easily see with the help of a magnifying glass) and thier hairy body gather the filth and when flies come from these dirty places and settle on food which most people leave in uncovered vessels inadvertently, the filth and disease causing germs are transmitted automatically to the food left uncovered. As the flies cannot take solid food they vomit on it, to make it liquid, stamp around on it till it dissolves and then suck the food thus made liquid.

Propagating Disease

As if these nasty pranks are not enough, the flies usually defecate while feeding. The different ways by which the flies can propagate disease germs are (*a*) by passing infected pathogenic germs of cholera, typhoid, dysentery sneaked up from the excreta of man, (*b*) by carrying them in external surfaces of body, viz., hairs, bristles, wings, footpads, etc., and (*c*) by vomiting the infected materials.

With this knowledge could you still consider flies as harmless as butterflies? Would you not take every opportunity to eliminate them?

The female fly lays some 600 to 900 eggs in five or six batches. The eggs are white, oval bodies each measuring 1/20th of an inch, deposited in the moist surface of manure heaps, or human fæces or decaying animal or vegetable matter. After 8 to 24 hours these eggs are hatched and a number of cone shaped maggots, each about half an inch in length, come out from the shells. These larvæ feed on filth and by about the 6th day they attain the pupa stage.

During the larval stage, it may feed on pathogenic organisms which may be carried over and may be seen in the excreta of the adult fly. This will be highly conducive to the spread of pathogenic germs. In about three days the fully developed fly emerges from the pupa. Depending on the favourable conditions and temperature, the time length to complete the whole life cycle, i.e., from egg to adult varies from 5 days to 20 days. The female is ready to lay eggs, in about 4 days after emergence. The life space of a fly is about a month in summer and somewhat longer in winter.

Control Measures

The best control measure is of course to prevent flies from being born at all. Some simple measures that can be adopted to achieve this end are:—

(*a*) Prevent indiscriminate defacation; use sanitary latrines.

(*b*) The proper place for the animal-dung is the manure pit. See that it is removed to that place. Do not let it to accumulate near houses. Cover the manure pit with mud after every addition or removal.

FACING PAGE—

(1) Senor Moreno Sanchez, President of the Mexican Senate who was recently in the City on a three-day visit photographed on arrival at the airport.

(2) Senor Moreno in conversation with Industries Minister Venkataraman who gave the Mexican President a dinner party at the Rajaji Hall.

(3) Senor Moreno inspecting an unit at the Guindy Industrial Estate.

(4) Members of the Malayan Parliamentary Delegation who visited the State recently seen in the company of the Chief Secretary at the Secretariat.

(5) Mr. Sardor Bin Haji Jubir, Minister of Transport of the Federation of Malaya, who visited the City recently, being received on arrival at the airport by Industries Minister Venkataraman.

Finance Minister Subramaniam inaugurated recently the Kanya Gurukulam High School at Thiruvcttiyur by lighting the sacred ' Kuthuvilakku '.

(c) All kitchen wastes and similar refuse should be placed in a closed receptacle and daily removed to the manure pit: If the refuse is combustible better burn it.

(d) Use of traps, baits, fly papers, sprays, etc., to eliminate flies.

Do not allow flies to have access to any article of food or drink and always remember that the fly problem does not arise in a clean house with a clean surrounding.

Maternal and Child Health Services

The object of the Maternal and Child Health Services in the State is to cater for the physical, physiological, nutritional and emotional care of the mother during prenatal period and expert advice, guidance and assistance during confinement and thereafter, and to look to the provision of physical and mental well-being of the *infant* from its birth through pre-school and school ages with a view to prevent illness and promote the health of the child.

The total number of Maternity and Child Welfare Centres functioning in this State under all schemes is 1,759. 113 Woman Medical Officers, 298 Health Visitors, 2,506 Maternity Assistants are working in these centres.

During 1960–61, ninety-six Maternal and Child Health Centres were opened in remote rural areas in the State under the Second Five-Year Plan. This has enabled the State to achieve the target of opening 489 maternity and child welfare centres under the Second Five-Year Plan.

Under the backward area scheme which had been sponsored by the Government of India with a view to rendering maternity and child welfare services in areas backward in such service, 19 main centres each with 4 sub-centres have been opened in rural areas.

Health Visitors

The training school for Health Visitors which was taken over by our State Government from the year 1938, and running in rented buildings till 1958 has since been housed in a permanent building constructed for the purpose at an estimated cost of Rs. 2·18 lakhs. Each year in July a new batch of Public Health Visitors are being recruited under the 18-month course under the State Scheme. Out of the 50 candidates who can be admitted each year, 25 candidates are entitled to get a stipend of Rs. 40 per mensem, throughout the training period. At present 25 students recruited in July 1960 are undergoing training in the Health School and another batch of 25 students will be recruited in July 1961.

Eight hundred Thayis have been trained out of 900 sanctioned for the year 1960–61. This brings the total number of trained Thayis to 3,200 under the Second Five-Year Plan out of the target figure 3,600.

Construction of 36 buildings for housing the maternity and child welfare centres and quarters for the Maternity Assistants under the Second Five-Year Plan at an estimated cost of Rs. 2 lakhs has been sanctioned by Government. Arrangements are being made to begin the construction.

Oil Agreement with B.O.C.

An agreement covering the grant to Oil India Limited of about 1,800 square miles for further oil prospecting in north-east Assam was signed in New Delhi on May 31 between the Government of India and the Burmah Oil Company Limited. Under the new agreement the Government of India and Burmah Oil Company will be equal partners in this enterprise and will each hold 50 per cent of the shares in Oil India Limited. The Foreign Exchange required for developing the oil resources found as a result of new exploration will be provided by the B.O.C. The Government of India will make available the required rupee finance.

"Gods Own Children"

Harijan Welfare in the State Since Freedom

Sri P. SANKARAN, *Personal Assistant to the Director of Harijan Welfare.*

[Gandhiji called them 'Harijans'. To him they were God's own children, not 'untouchables'. He dedicated his life to rooting out this evil of untouchability with a passion and purpose that he alone was capable of. With that unerring sense of practical example which invariably characterized his genius as a social reformer, he lived with them, as one of them, in huts and slums. In no other way could he have succeeded in rousing the moral consciousness of the country to this social evil than by his great act of personal example. In this article the author reviews the progress achieved in improving the lot of the Harijans in Madras State since the advent of freedom. He points out that the right climate for reform in the State was created long before Independence with the Temple Entry Authorisation Act of 1938]

As the tri-colour flag of India was hoisted on August 15, 1947, the banner of freedom, equality and fraternity was also raised and ever since the Government have been taking various steps for the development and progress of the nation. In this programme of development, the uplift of Harijans has been given considerable importance.

The down-trodden Harijans were earlier denied all social rights. Their children were not admitted in the schools, their women were not allowed to take water from common wells and the doors of temples were closed for them on the plea that their presence would pollute the holy atmosphere there. It was commonly believed that they were born to suffer in this world.

As people passed from the mediæval to the modern age, the stigma of untouchability was felt very sharply. To eradicate this 'touch-me-notism' great leaders like Raja Ram Mohan Roy and social and religious luminaries like Sankara, Madhva and Ramanuja raised the banner of revolt. But their seeds for reformation fell on barren soil.

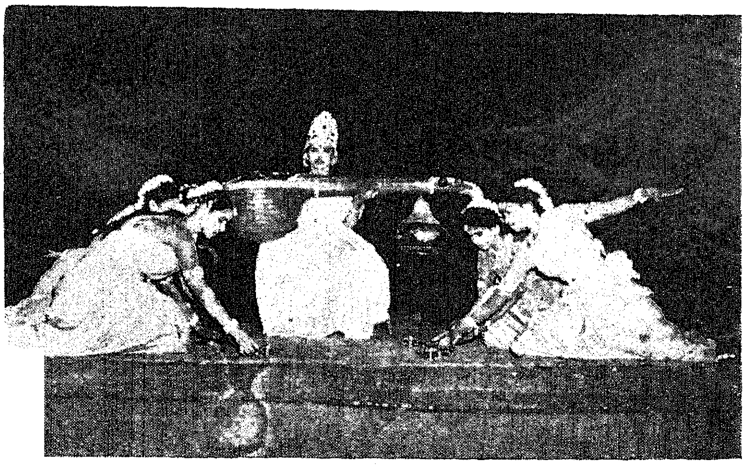
Gandhiji's Benediction

Gandhiji named the depressed classes as Harijans, for he felt that the condition of the Harijans would improve if they were called as sons of 'Hari' (Lord Vishnu). From the time he took up the national leadership, he pursued the Harijan amelioration programme with unabated vigour and unflagging faith. He firmly believed that 'without the removal of this untouchability, Swaraj is a meaningless term'. Gandhiji lavished affection on the Harijans and dedicated himself to the eradication of untouchability. The epic fast undergone by him in 1932 on their behalf focussed the attention of the nation on this grave problem. With the blessings of Gandhiji and Dr. B. R. Ambedkar, the great Harijan leader, the Congress adopted removal of untouchability as one of the important planks of its programme.

New orientation

After Independence, the National Government took up the reins of administration and attempts have been made to give a new orientation to national welfare work, more particularly to aspects of life relating to the economic and social status of Harijans and thus help materialise the ideals of Gandhiji.

The Constitution of India has provided necessary concessions to lift Harijans out of their social and economic disabilities. The practice of untouchability has been statutorily forbidden in any form and 'The Madras Removal of Civil Disabilities (Amendment) Act of 1947, and 'the Untouchability Offences Act, 1955' are there to punish anyone who observes this practice. The Constitution has also provided reservation of seats for Harijans (now called Scheduled Castes) in Parliament and the State Legislatures. Posts are reserved for them in the 'Public Services' at all levels. The Constitution has also conferred necessary powers to the State to promote the economic and educational interests of Harijans with special care. These preferential concessions ordered to be granted for ten years from the day India became a Republic have since been extended for a further 10-year period up to 1971.



A scene from the cultural programme that was presented by girls at the Annual Day Celebrations of the Government Senior and Junior Approved School for Girls.

With reference to the provisions in the Constitution, the Central and State Governments have been taking various measures for the amelioration of the conditions of Harijans. The programme required appropriate social climate to bring effective change in the life of Harijans and for the development plans undertaken by Government in this behalf to succeed. The right climate had been created in Madras State even before Independence. The Temple Entry Authorisation Act introduced in 1938, when the Congress took up the reins of Government made a revolutionary change in the outlook of Hindu Society. This Act and the efforts by the social workers interested in Harijan welfare had prepared the ground for the ameliorative measures sponsored by Gandhiji.

The State Government, after Independence, has waged a relentless war to eradicate the evils of untouchability and effect the uplift of Harijans. A separate department known as the Harijan Welfare Department was created in 1949 to undertake measures for the socio-economic uplift of Harijans. The department receives a helping hand from the Centre also by way of grants and subsidy. A sum of Rs. 236 lakhs was spent in the year 1958–59 and Rs. 306 lakhs in 1959–60. The anticipated expenditure for 1960–61 is about Rs. 391 lakhs. For the year 1961–62 a provision of Rs. 306 lakhs has been made under the State and Central Budgets.

Steady progress

However, huge money allotments and expenditure alone cannot produce the expected results immediately because the efforts by Government are in the direction of bringing a change, not only in the outlook of both Caste Hindus and Harijans but also in the direction of implementing a programme of social reformation in the country. Therefore the progress may seem slow but is certainly steady.

In the field of education, the Government are maintaining nearly 1,000 schools under the direct control of the Director of Harijan Welfare, most of them being elementary schools. In Kanyakumari district alone, where there are no schools, the Government are running night schools and pial schools. However, Government are not opening any more of these schools as it is felt that they may perhaps permanently separate Harijan children from other children. Where the necessity for separate schools for Harijan boys and girls exists Government have opened general schools under the control of the Education Department or the local body where Harijan students are admitted. The Government have been providing books and slates for children studying in the schools managed by this Department. The children are also provided mid-day meals to encourage regular attendance. Government have now sponsored a new scheme for supply of dresses consisting of two sets to every Harijan girl student studying in all Harijan Welfare schools and also to Harijan girls staying in Government girls' hostels throughout the State during the year 1960–61.

Community living

The Government are also awarding boarding grants to Harijan students staying in recognized subsidised hostels at the rate of Rs. 15 per month. Funds are provided for this purpose under the State and Central Budgets. The Government themselves are running hostels for the benefit of the Harijans. Pupils belonging to both the Backward and Forward Communities are admitted in these hostels to encourage boys and girls moving together, eating together and living together so that eventually these trends may result in the removal of untouchability. Such hostels have been opened wherever the necessity arose and Government have also been taking over privately ill-managed subsidised hostels.

The Government have been awarding various scholarships to Harijan students and pupils in all recognized hostels, undergoing pre-matric, post-matric, industrial mid-wifery, professional and post-graduate studies. The scholarships granted consist of amount required for the purchase of books, payment of special fees and also boarding and lodging charges. Those who study as day-scholars are granted scholarships for the purchase of books and payment of special fees. All Harijan students are exempted from payment of examination fees.

Promoting intelligence

In order to encourage Harijan pupils to study well, Government award two gold medals and two silver medals to the first and second of the Harijan boys and girls in each district who secure the highest marks in the S.S.L.C. examination.

The Harijans are provided with house-sites both by assignment of poramboke lands and acquisition of private

lands so that they may live in healthy places. Facilities like pathways, burial grounds, drainage, etc., are also provided. Drinking water wells are sunk in their colonies and street lights are also put up. Lands are reserved and assigned to them for cultivation.

Land colonisation schemes on co-operative basis are being formulated wherever vast tracts of poramboke lands are available for cultivation. Nearly 100 schemes have been formulated and these are under consideration. These schemes are expected to benefit nearly 5,000 Harijan families. A special Deputy Collector is working in the Directorate of Harijan Welfare for the purpose of inspecting these lands and formulating the schemes. These schemes, when implemented will considerably improve the economic standards of Harijan agriculturists.

Government have also been taking up works like construction of school buildings, culverts and formation of pathways in Harijan colonies in the National Extension blocks with contribution from Harijan Welfare and Block Funds. Community Recreation centres and rural libraries have been constructed by the Harijan Welfare Department throughout the State.

Scholarships

The Government of India have also sponsored many schemes for Harijan Welfare through the State Department of Harijan Welfare. The Government of India have been sanctioning scholarships for post-matric studies to Harijan students. Under the Grant-in-aid and Centrally sponsored schemes of the Union Government, Harijans receive various grants, such as subsidies at the rate of Rs. 1,500 for sinking of an irrigation well to those who possess land for cultivation, and agricultural subsidies at the rate of Rs. 400 for the purchase of plough bulls, agricultural implements and seeds.

Sanction by way of a grant of Rs. 750 to each Harijan beneficiary, consisting of a subsidy of Rs. 550 and loan of Rs. 200 to be recovered in easy instalments, for the construction of houses has also been provided under Harijan housing schemes. Necessary sanitary amenities have also been provided for them. Cottage industries centres have also been opened for training Harijans in small cottage industries like brick works, etc., and a number of Harijans have benefited by the training received at these centres.

The Government have also been taking steps to settle Harijans in trade like leather works, sewing, etc. Technically trained Harijans are granted subsidies not exceeding Rs. 500 in shape of tools for carpentry, balcksmithy, ~~sewing~~, leather works, etc.

Gospel of Equality

Apart from these measures taken for their economic and educational uplift, Government have been taking due care and have initiated effective steps to eradicate untouchability and raise the social status of Harijans to that of other communities in the country.

Deputy Sevaks have been appointed throughout the State to preach the gospel of equality and do intensive propaganda against various social disabilities. They reform Harijans, convene meetings to teach them to improve their economic and social standards, etc. Pamphlets are issued and posters are exhibited explaining the evils of untouchability. Social workers who have rendered meritorious service in the work of Harijan uplift and eradication of untouchability are awarded gold medals and encouraged. Grants are sanctioned to non-official organizations to utilise their services in Harijan Welfare work.

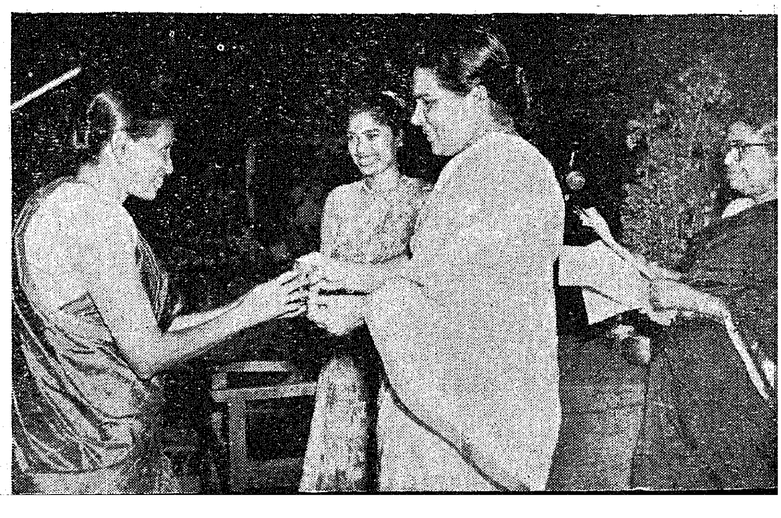
Welfare Propaganda

Harijan Day is celebrated in the districts on the 28th day in February and 30th of other months and health campaigns and meetings are conducted on these days in Harijan colonies. The week from January 24 to 30 is observed as 'Harijan Week' throughout the State annually and Harijan Welfare propaganda is carried out on a mass scale during the period.

The several measures taken by the Government after the attainment of Independence, have changed the general backwardness of the Harijan community to a great extent. The younger generation of Harijans has received education in great numbers. The educated youths of this community have secured several appointments in the public services. Other members have settled down in agriculture as well as in trades and cottage industries.

The Harijans are fast learning to keep pace with the times and adopt themselves to new social needs. They are making every effort to take their proper place in the new social set up of this country and to see that the helpful measures undertaken by the Government spur them on to efforts towards greater progress and prosperity.

Smt. Lourdhammal Simon, Minister for Local Administration, presided and distributed prizes at the annual day celebrations of the Government Senior and Junior Approved School for Girls in the City recently.



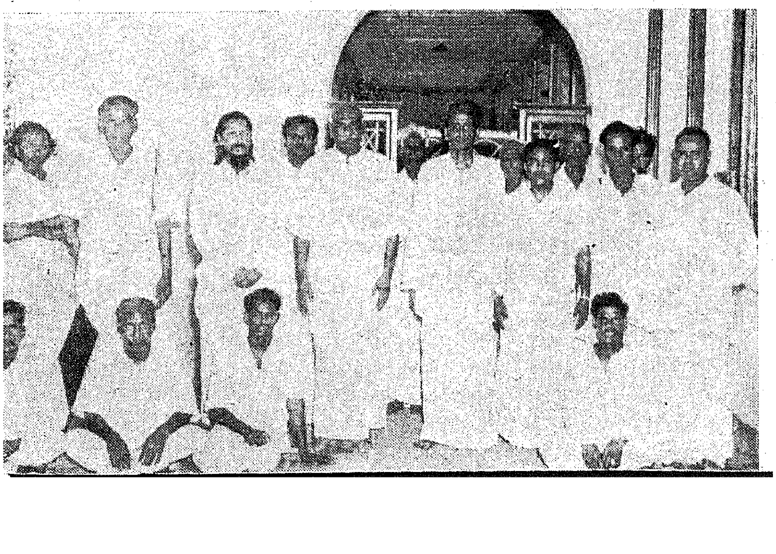
The New Role of the State's Highways Engineers

[The annual conference of the engineers of the Madras Highways and Rural Works Department spotlighted the new orientation of the 'Highways Department' as the 'Highways and Rural Works Department'. While Sri P. Sirajuddin, Chief Engineer (Highways and Rural Works), reviewed the achievements of the department since its formation in 1946, Sri P. Kakkan, Minister for Works, emphasized aspects of the new role of the Highways Engineer under emerging patterns of panchayat administration. Sri E. P. Royappa, Secretary to Government, Public Works Department, dealt with problems relating to road developement targets and their fulfilment. A short report of the two-day conference which was recently held at Kodaikanal is presented in this article]

The annual conference of the engineers of the Madras Highways and Rural Works Department was held at Kodaikanal recently, Sri P. Kakkan, Minister for Works, Sri P. Sirajuddin, Chief Engineer and Sri E. P. Royappa, Secretary to Government, Public Works Department, participated in the conference. Several administrative and technical matters were discussed during the conference deliberations.

Tracing the achievements of the department from its formation in April 1946, the Chief Engineer said that the mileage of the roads in the area corresponding to present Madras State had increased from 19,400 to about 30,000, out of which 11,200 were Government roads. The rest were under the control of Panchayat Unions and Panchayats. He mentioned that Government proposed to take over 3,900 miles of bus route roads from local bodies and 1,000 miles had been taken over from 1961–62. The expenditure on road development works which amounted to Rs. 2·62 crores during the post-war period from 1947 to 1956 had progressively increased to Rs. 5·07 crores during the First Plan period and Rs. 11 crores during the Second Plan period.

The Chief Minister seen with members of the South Arcot District Fishermen's Association who recently met him at the Secretariat and presented a memorandum.



Not Adequate

The ceiling indications of the Third Plan amounting to about Rs. 15 crores were not adequate to meet the demands of modern transport. In view of the demand for allowing more and more express bus and lorry services, there was urgent need to provide two-lane surfacings to at least about 1,000 miles of stretches immediately. For the targets of agricultural production to be reached, important rural roads had to be metalled and other village roads provided with surfacing like gravel or stabilised soil. The existence of weak structures on the old road system was a severe handicap in the growth of industry as was already revealed from difficulties experienced in transporting heavy materials to Neyveli Lignite Corporation and other projects like Kundha and Parambikulam.

The Chief Engineer stated that the engineers of the Highways department had a major role to play in the panchayat pattern of administration. Government had entrusted them with technical responsibility because of their long association in rural welfare schemes. Development needed initiative in planning, enthusiasm for implementation and efficiency at work. There was vast scope for application of engineering skill and individuality in the rural field. The engineer should give a satisfactory account of himself and bring credit to the department.

A different task

Sri P. Kakkan, Minister for Works, paid tributes to the Highways Engineers for the efficient maintainance of the road system in the State. The additional task assigned to them in the rural field was however different from their

regular duties. Rural service had to be considered as service to God and a devotional spirit was required for achieving the best results. They had to establish frequent contacts with the villagers, give respect to them, mingle freely with them in their community functions and entertainments and thus win their confidence. Avenue trees were assets to the nation and they had to be properly protected. The taluk avenue committees consisting of the Assistant Engineer, Circle Inspector, Agricultural Demonstrator, etc., could do something tangible to prevent illicit tree cutting and undertake more new plantations. The officers could frequently inspect works in progress, make prompt payments for works done and see that repairs to bridges were effected with utmost speed.

Tackling problems

Sri E. P. Royappa, referred to the problems that had to be tackled to achieve the targets of road development. Proper ground work and investigation were essential before a scheme was launched for execution. Improper estimating often led to delay consequent on the need for revised sanction. Targets must be fixed intelligently after taking into consideration factors such as seasonal conditions, etc. Officers should not rest content with the provision of temporary diversions at sites where bridges had collapsed due to floods and other causes. They should arrange for the early reconstruction of the structures.

Th

friends and admirers.

Madras State led other States in road development. And this fact should spur the Highways Engineer to forge further ahead in his efforts to take a good system of roads to every nook and corner of the State.

Women and Children in C.D. Blocks.

The Union Ministry of Community Development and Co-operation has suggested to the State Governments to undertake a certain minimum programme for women and children in each C.D. Block. The programme is to be determined taking into consideration the local conditions. Each Block is to concentrate on three or four items of work out of nutrition, family planning, literacy and social education and enrolment of school children, beautification of the homes, recreational activities, improvement of the economic conditions by activities such as poultry-keeping and bee-keeping.

It has been suggested to the State Governments that there should be at least one good mahila mandal in each Village Level Worker's circle of 10 villages, to be started within a specified period and run by associate women workers.

'Kudimaramath'

and the Common Weal

...al consciousness in the State are reflected in the two ... relate to the removal of a motor traffic hazard ... h Salem district by the police with the help of villagers ... aramath in certain panchayats of the Papanasam ... ai, Deputy Inspector-General of Police, Coimbatore ... rman, Panchayat Union Council, Papanasam].

...mapuri to Mettur ... noticed two Garudasthambams standing out on the National Highway within a short distance of each other between mile stones 195 and 197—one before the Tholasingaperumal temple and the other before the Sendraya Perumal temple.

Both the pillars have stood in their positions from time immemorial and with high class road surfacing in recent years they constituted grave hazards to motor traffic, especially as the latter pillar was on a sharp curve. In the last five years the toll of mishaps in the proximity of these pillars—some of the mishaps were directly against the pillars—was 12 inclusive of 3 fatal cases.

Several approaches

Several approaches were made to the concerned villagers to move these pillars but sentiment and custom stood in the way and the pillars were not removed. The Police saw this continuing hazard—even warning boards did not have much effect—and decided that the pillars must be moved out of the way. The question was as to how the decision was to be implemented.

If action had been initiated under section 133 of the Cr.P.C.. a favourable order would certainly have resulted. However, as nothing is farther from Police intentions than that law abiding peoples' feelings and sentiments should be offended, the Deputy Superintendent, Salem Rural, Sri S. Palaniappan and Inspector, Dharmapuri. Sri T. V. Sitapathy were deputed to gather the villagers, explain at length the necessity for moving the pillars and convince them that the shifting would be in their interest as it would save loss or injury to their folk.

Desired effect

As expected this approach had the desired effect and the villagers who had earlier refused to entertain any suggestions for moving these pillars not only gave their consent but offered to co-operate with the Police in the task.

All that remained to be done was to take up the job in hand forthwith and this the Deputy Superintendent of Police, the Inspector and a small band of Armed Reserve men accomplished within a very short time. They moved the pillars 20 feet outwards to new positions agreed to by the temple trustees and the local member of the Legislative Assembly.

When the work was done the villagers were happy that the Police had cleared two bad obstructions. Bus and lorry drivers who passed regularly heaved a sigh of relief and many a motorist who has not known the earlier obstructions is blissfully unaware of the motoring hazard that the police have freed him from.

Kudimaramath

The old delta in Thanjavur district is known for its net-work of channels, big and small, irrigating thousands of acres in each village. From time immemorial, the ryots of the villagers used to take up the work of silt clearance and they used to maintain the channels in good condition. However in recent decades, owing to a variety of reasons, the work has not been done properly. Kudimaramath as it was called became a rare feature and in consequence, the channels became inefficient carriers of water for irrigation. The bed became silted up. The bunds either were washed away or were encroached upon by adjacent land owners or cultivators. This condition retarded the progress of the grow-more-food schemes and to some extent set at naught the efforts of the Government and the ryots. Hence taking up Kudimaramath became the need of the hour, a vital necessity.

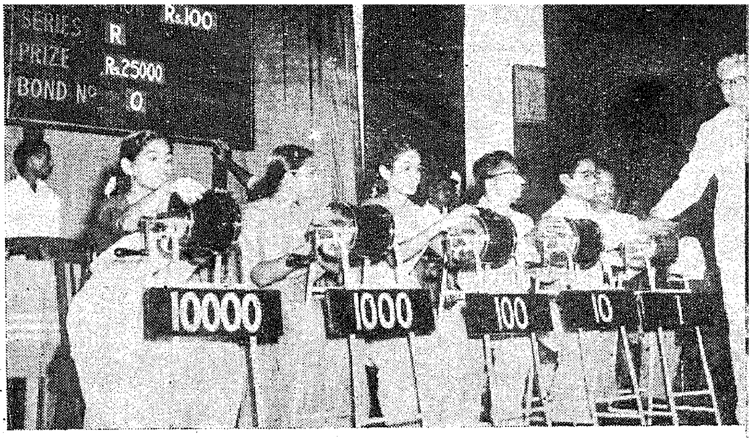
Long neglect

Under the provisions of the Madras Panchayats Act, 1958, the Panchayat has been authorised to take upon itself the ryots' responsibility to do Kudimaramath work and to levy a fee from the beneficiaries. No Government

grant is normally necessary for this. But there exists the fact that due to long neglect of the obligations under Kudimaramath some of the works have reached a level of deterioration at which even if the ryots now carry out the customary repairs, the works cannot be restored to a proper condition. If the works are to be restored, heavy expenditure will have to be incurred. It was, therefore, proposed that up to a limit of rupee one per acre of ayacut, expenditure on Kudimaramath should be treated as normal. Any expenditure in excess of this was to be treated as "excess Kudimaramath" and Government proposed to pay two-thirds of it.

Special Drive

With this aid, the elected representatives of the people of the villages will be in a position to come into the picture and revive the time honoured convention of shramdan for the common benefit of village irrigation. An organized special drive and an effective start has now been made. In Papanasam Block in Thanjavur district, so far twenty-four panchayats have taken up the work of silt-clearance under the panchayat agency in pursuance of the scheme and the work is nearing completion in a good number of them. In a few panchayats, the absence of rains and the hard soil hold back the enthusiasm of villagers to execute the work early.



Industries Minister Venkataraman inaugurating the Fourth Prize Bonds draw in the City recently.

Steady progress

The work is recording steady progress. The interest evinced by the Panchayats is keen and great. It is hoped that this experiment in Papanasam Block will bring in great benefits in the field of agricultural production and village economy. A good number of old ryots feel that what they have not seen for decades in their life and what they have been longing to see—the revival of the traditional practice of Kudimaramath—has after all come about. They are happy no end at this very constructive development.

Insurance of Bank Deposits

The Union Government have decided to introduce a scheme for the insurance of bank deposits. A bill for this purpose is to be introduced at the next session of Parliament. The idea is to avoid or minimise the hardship caused to depositors through failure, reconstruction or amalgamation of relatively weak banks. An autonomous Corporation will be set up for the purpose with an authorised capital of Rs. 5 crores all of which will be allotted to the Reserve Bank. The Governor of the Reserve Bank will be the Chairman of the Corporation. The deposits in all the commercial banks functioning on the date of the introduction of the scheme will be insured. Deposits with the State Bank of India and its subsidiaries will not be covered because of their special position. These banks which are associated with Government will, however, be required to contribute to the funds of the Corporation. The limit of the amount of individual deposits insured and the rate of premium will be fixed by the Corporation with the approval of the Union Government. This may be varied from time to time in the light of experience. To begin with, it is expected that individual deposits to the extent of not less than Rs. 1,000 will be guaranteed under the scheme.

Need for Improved Techniques

Fish Curing Practices in Madras State

S. T. CHARI, *Superintendent, Fisheries Technological Station, Tuticorin*

[Unless fish curing methods in the State are brought up-to-date by adopting the latest techniques in fish preservation and processing, the industry in the State runs the risk of letting slip its grip on a thriving export trade, states the author of this article. Presenting a case for voluntary quality control by the trade, the author enumerates the common defects in fish curing practices in vogue and suggests methods for their improvement]

Preservation of fish by salting and drying is one of the age-old practices adopted by fishermen to preserve excess fish catch in our country where icing, chilling and freezing of fish are comparatively recent developments in the fish processing industry. In spite of the advantages of preserving fish by these latter methods and marketing them in a fresh state being widely known, still salt curing of fish is resorted to. The reasons for the persistence of the practice are the inadequacy or non-availablilty of icing or freezing or storage facilities in fishing centres, the high cost of such preservation wherever facilities exist, conservatism preventing both fishermen and consumers from using iced or chilled fish. All these factors seem to weigh in favour of the fishermen salting their excess. The prospects of a better market in neighbouring countries like Ceylon, Malaya and Burma induce them to go in for fish curing rather than marketing the fish in a fresh condition in the country of production.

Practices in Vogue

Madras, with a coastline of 620 miles is estimated to land 50,000 tons of sea fish out of which nearly 3/5 of the total catch is salt cured. There are 17 Government fish-curing yards and a number of private fish-curing premises. The practices in vogue are pit curing, or tub curing or dry salting. The quality of the fish thus cured leaves much to be desired and yet the consumers seem to be satisfied with the product for the money's worth. There is also considerable export of cured fish from Madras State to Ceylon and special products like dried prawns, fish maws and shark fins are exported to Burma, Malaya and Singapore. The chief ports of export are Tuticorin, Dhanushkodi, Madras, Nagapattinam, Kilakarai and Thondi. A conservative estimate will put the figure of export of cured fish at 17,000 tons, valued at $3\frac{1}{2}$ crores of rupees annually, Tuticorin Port alone accounting for 15,000 tons. When the magnitude and importance of this trade and commerce which is ever on the increase is considered, it is strange that fish curers or the people in the trade seem to have little concern for the quality of the product exported. They are not worried about maintaining even certain minimum standards of wholesomeness and purity of the product.

Quality Control Needed

To improve the quality of dried fish and to ensure a consistent demand for them, some kind of quality control should be considered. A note of warning may be given to the people in the trade here that Ceylon with seas surrounding her on all sides is advantageously placed to exploit her fishery wealth. Reports confirm the position. If our fishing trade is to get well established in that country consumer preference for improved and better quality product has to be met. It is of paramount importance that a beginning is made to control the quality of fish exports to Ceylon. If this is not done soon a stage will be reached when Ceylon will try to dictate terms for fish imported into that country or completely replace our fish with their own increased landings. Our entire fishing industry and the flourishing trade and commerce in it will then suffer an irreparable loss.

Common Defects

The common defects noticed in the present exports are: (1) Use of impure or low quality salt. (2) Improper curing by not using the right quantity of salt for the maximum period to enable the salt to strike through. (3) Insufficient drying. (4) Improper packing and storage. (5) Contamination with sand. (6) Poor quality of the fish originally taken for fish curing. The fish thus cured is of unwholesome quality and emits an offensive odour due to bacterial spoilage. It is unattractive to consumers due to molds, fungus and insect attack, the powdery nature of the flesh due to impure salt or insufficient drying or use of tainted fish for curing. All

these defects can easily be set right only if the curer takes proper care at every stage of curing.

The Right Methods

The fish should be cured in separate premises or enclosures where hygienic and sanitary conditions could be maintained strictly. Only fresh fish of prime quality should be used for curing. Salt of sodium chloride not less than 96 per cent shoud be used and fish must be salted in good quantities of salt for the prescribed minimum period. The fish should be washed well both before and after curing and after draining should be dried in the sun on raised platforms or on mats spread over such barbecues with intermittent turning over to ensure uniform drying. The final product should not be above 30 or 35 per cent in moisture and should be firm and white in appearance. This should be properly kept in storage without admixture with sand or contamination with insects or rodents. Special wooden boxes lined with waterproof lining should be used for packing fish for export. By adopting these methods preserved fish of uniformly high quality can be easily obtained and the market will get firmly established.

Voluntary Action

At present the export of salt cured fish from this country to Ceylon is not subjected to quality control by any rules and regulations. The importing country too seems to have no check on the quality. The trade is flourishing mainly under the rule of supply and demand. This may not continue for ever. It is high time that the industry took a bold step in the right direction by instituting quality control voluntarily before the Governments of both the countries step in and impose standards of quality which may be difficult to follow by the trade at a later date.

Home Minister Bhaktavatsalam witnessing a section of the exhibits in the Madras State Clay and Paper Toys Exhibition held in the City recently.

The Government have felt the need for a machinery to test the samples made available by the industry and have recently approved the Fisheries Technological Station, Tuticorin, to analyse chemically the cured fish samples received from interested parties, curers and shipping agents for its quality and issue a certificate for a nominal fee. It is up to the industry to avail itself of this opportunity and adopt some standard in the production of cured fish in a voluntary way at least, as a beginning.

Use for Retired Scientists

The Indian Council of Agricultural Research has sponsored a scheme to make use of the services of prominent scientists in the field of agriculture, animal husbandry and allied sciences, who have retired from service or are due to retire soon.

Under the scheme, such scientists who are still active in research will be given an annual allowance up to Rs. 6,000 and a grant ordinarily not exceeding Rs. 4,000 for expenses to enable them to continue their work. For this purpose they should try to secure a sponsoring institution acceptable to the Council which would provide them facilities for the continuation of their work.

Everything New in Science

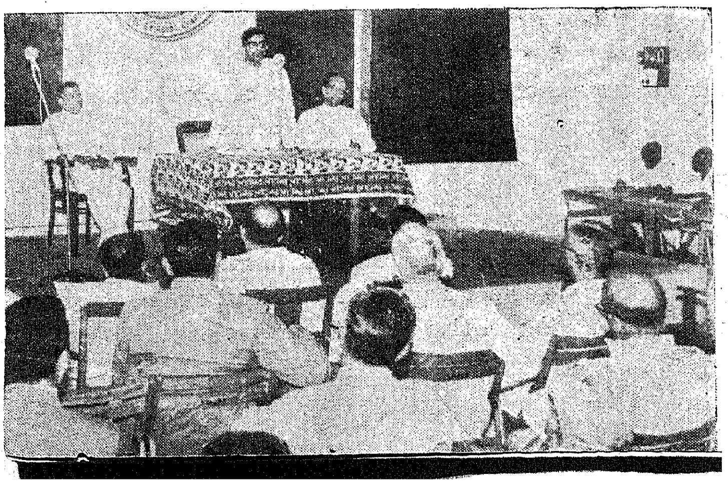
[Numerous new techniques and devices are daily emerging in this Age of Science to lighten the burden of the housewife, the common artisan, the small businessman and the big industrialist. This feature takes note of such developments. Apart from Indian scientific advances, interesting 'bits' from Britain and United States are also included].

The use of Indian graphite for the manufacture of graphite brushes, crucibles, dry cells and pencils would now be possible as a result of a process for upgrading the indigenous ore developed at the National Physical Laboratory in New Delhi. Pilot scale beneficiation trials conducted over the last few years in the Laboratory have yielded fine, low-ash graphite, suitable for a wide range of applications.

The characteristics of the graphite required vary according to the use to which it is put. To examine the suitability of indigenous graphite for various uses, the Laboratory has determined the desirable specifications. Beneficiated Indian graphite has been found to meet these requirements.

For instance, the suitability of graphite for the dry cell or brush industry cannot be judged merely on the basis of fineness and its ash contents. The factors that matter are electrical resistivity and bulk density measurements which are essential for determining the suitability of graphite. Similarly, for crucible manufacture, a knowledge of specific surface of graphite is important, and in pencil manufacture, it is the smearing property. Suitable methods have been devised for undertaking theses tests.

Finance Minister Subramaniam addressing a conference of industrialists held in the City recently which discussed problems relating to the training in industries of engineering students and teaching personnel.



A gas turbine engine of unique design suitable for high speed aircraft has been designed and fabricated at the Gas Turbine Research Centre, Kanpur. The turbine is capable of 13,300 revolutions per minute and has a thrust rating of 2,200 lb.

A special feature of the engine is the annular combustion chamber, which has been incorporated for the first time in a centrifugal gas turbine. The engine is simple in design and its components can be made with conventional machine tools.

The Gas Turbine Research Centre was established in 1958 to conduct studies on design, performance and development of gas turbine engines and their components.

The National Dairy Research Institute, Karnal, has evolved a simple and economic process by which skim milk powder can be made under conditions obtaining in the village. At present large quantities of buttermilk and skim milk obtained as by-products during the separation of cream and ghee are allowed to go waste in villages.

Skim Milk Powder

According to the process developed, the skim milk is evaporated by direct heating in an open pan till a pat is formed. The pat is broken by hand on perforated trays which are then transferred to a drying chamber where a temperature of 110—120°C is maintained. After drying, the powder is ground and sieved to produce a fine, insoluble product which can normally be stored for two months without appreciable deterioration.

A desiccating-*cum*-drying set has been designed for manufacturing the powder. The set consists of an oven, iron pan and stirrer, and a drying cabinet. It can be fabricated at a nominal cost in the village itself.

The skim milk powder obtained by the new method contains all the essential constituents present in skim

milk and could be used for indigenous recipes. But unlike, soluble powder obtained by roller and spray drying methods, this powder cannot be remade into milk.

Plaster of Paris

The conditions under which Plaster of Paris suitable for use in the pottery industry can be manufactured on a commercial scale have been investigated at the Central Glass and Ceramic Research Institute, Calcutta.

The open pan process generally employed in India for the production of Plaster of Paris does not permit close control of temperature of calcination of gypsum and ageing of the product. As a result, the quality and performance of the product are not consistent and vary within wide limits.

A calciner to hold the charge of about 25 lb. has been designed at the Institute. It has a semi-cylindrical bottom and a flat top having two vents in it to allow the gases to escape and is provided with a stirrer running along the length. Plater of satisfactory quality has been obtained by calcining gypsum in the calciner for only 1½ hours.

Based on the experience gained with this equipment, a pilot kiln with a capacity of about 160 lb. per charge was constructed to assist in designing a kiln for large scale production. It was found that the entire operation of charging, calcining and discharging could be completed within 1½ hours.

Exciter Machine

A new type of exciter machine has been designed at the Electrical Engineering Department of the University of Roorkee to increase the dynamic stability of water wheel generators and to utilise the increase in currents for higher power output.

Sudden changes in the armature circuit of a synchronous machine cause additional currents in the rotor circuits. In the case of conventional exciter machines (based on separate excitation), the output voltage is constant. The induced currents in the field circuit, therefore, decay with certain magnetic time constants.

To prevent the transient effects from reaching static conditions the voltage at the armature terminals of the exciter should change according to the voltage required for the flow of additional field current.

Based on these considerations a single exciter machine has been designed which incorporates series and shunt windings without any coupling between them. With this arrangement additional currents in the field circuit of the machine could be used to increase the amount of available power.

Indigeneous Menthol

Encouraging results have been obtained in investigations on the extraction of menthol from the plants grown in Jammu. The overall yield of menthol from the natural oil amounted to 70 per cent, according to the results obtained by the Regional Research Laboratory, Jammu.

In the absence of indigenous sources of menthol, India has to import her entire requirements, estimated at about Rs. 80 lakhs. The demand for the product is fast increasing, particularly from the pharmaceuticals industry.

The Regional Research Laboratory, Jammu, investigating indigenous production of menthol, introduced eight years ago, the Japanese mint, *Mentha arvensis* Linn. in Jammu and Kashmir. The cultivation of the plant is being extended to other parts of the country.

It is estimated that an area of about 6,000 to 10,000 acres has to be brought under cultivation to meet indigenous requirements of methol. The yield of the fresh herb is nearly 200 maunds per acre which in turn yields about 50 lb. of the oil. The dry leaves yield 3—4 per cent oil containing nearly 70—80 per cent menthol.

Wild Life Speech

The Council for Nature, in a new scheme to record the "conversations" of wild life in the United Kingdom, is to send an army of 70,000 naturalists, equipped with tape-recorders, into the fields and woods of Britain. It is hoped that the "speech" of every living creature—mammals, birds, insects, and even fish—will be recorded to contribute to a library which is being set up at the British Institute of Recorded Sound.

Tape-recordings of the sounds, with commentaries explaining them, will be available free to scientists all over the world. These recordings will open up a completely new field to naturalists. Many of these sounds have never been heard clearly before. Most existing records are of bird song; but there are 140 species of mammals in Britain, and numerous fish and insects, all of which make sounds. Fish, naturalists claim, make a barking noise.

Jute Fibre

Research at Kew Gardens, London, on jute plants treated with a plant hormone extracted from a fungus has shown that the length of the fibre cells increased, on an average, about 50 per cent, and often more. The hormone is gibberellic acid.

It is believed, that the discovery may be of major importance to producers of jute, hemp, and possibly other fibres. It was not yet possible to estimate the economic significance of the discovery since the experimental plants were grown under glass and in conditions not exactly ideal. If similar increases in cell length could be obtained in the field, then, provided the cost of gibberellic acid was not prohibitive, it may be possible to make some economic use of this investigation, it was stated.

Artificial Gas Fields

Plans to create artificial underground gas fields to store gas produced in the summer months so that it can be used in winter, when demand is heaviest, have been announced by the British Gas Council. Gas-making processes required a level of capital investment which made it necessary to produce gas at a uniform rate throughout the year. But the demand for gas, as more and more was used for space heating, was becoming more concentrated in the winter months.

To reconcile a constant level of production with seasonal fluctuations, storage space would be needed far beyond what could be provided by traditional gas-holders. Underground storage systems would be created to store some of the summer production for winter needs. Test drills for suitable strata—a porous structure was ideal—were being carried out in several countries. Subsequent results taken from bores would determine where gas would be pumped underground to be stored.

New type Glider

An underwater "glider", shaped like a delta-wing aircraft and fitted with a cockpit and control instruments, is to be used for the first time in exploration work off Malta this summer. It has been designed by members of a party of under-graduates and post-graduates of the Imperial College of Science and Technology, London, who are to make the expedition in July and August.

Their aim is to record accurate measurements of raised and sunken beaches and watch for items of archaeological interest. The "glider", about 6 feet long, will be towed at a depth of up to 200 feet by a boat equipped with a radio-telephone link between its crew and the diver aboard the "glider". One of the chief aims of the "glider" is to ease the physical strain on the diver, usually hampered by the weight of his breathing equipment. The old towing method was for the diver to cling to a rope trailing from the boat.

Electronic "Fish"

An electronic "fish" designed in Scotland is to be used by Italian scientists to plot the magnetic contours of the Mediterranean Sea. The equipment is reported so sensitive that while under test, it was found that the metal on the golf clubs from a nearby golf club was upsetting the magnetic field and affecting the measurements made by the "fish".

By measuring the magnetic field in the sea, the contours can be plotted in the same way as geographical contours and provide information of interest to geophysicists and oceanographers, it is claimed. The equipment is called a Proton Spin Magnetometer. Two "fish" housing electronic circuits, towed 1,000 feet astern of a ship, sent back signals, the frequencies of which are directly proportioned to the earth's magnetic field. These frequencies are accurately measured and taped by equipment on board the ship, it is stated.

X-ray Microscope

A new British company has been formed to manufacture a new type of microscope using X-rays. Four models of the microscope are already in use.

The advantage of X-rays is that they penetrate opaque objects and so can give pictures of internal structures without the need of thin light-penetrable sections as in the ordinary optical microscope or ultra-thin sections as used in the electron microscope. With this X-ray microscope, living things can be examined microscopically and in depth. In metallurgy, too, the uses are many and varied, it is stated.

Underwater Communication

An underwater voice communication system for use by divers is now being manufactured by a United States company. It enables one diver to talk with another up to 150 feet away and can be used in water as deep as 120 feet.

The system contains two basic parts—a mask-microphone, which is a partial face mask containing a microphone, and a speaker-amplifier, which contains a power supply, amplifier, and speaker system. The speaker-amplifier is strapped to the diver's air tank.

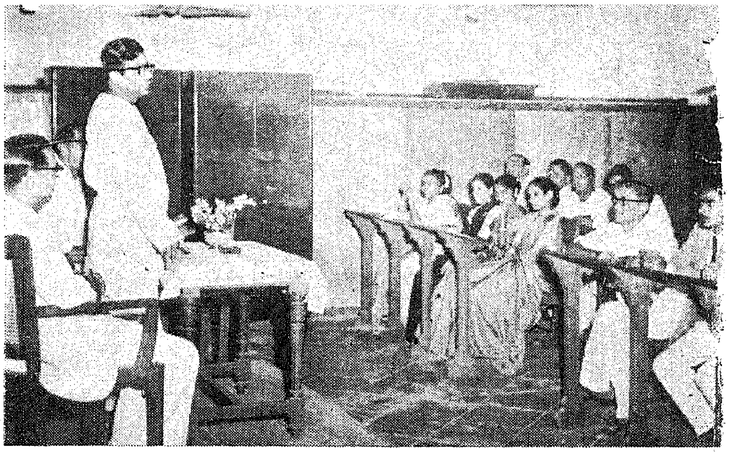
Because of the pattern of sound wave radiation in water, the user of the device does not have to face the diver to whom he is talking. The waves spread out in all directions and are heard by the other diver without the aid of a hearing device. The device is called Scubacom.

"Picture Telephone" Patented

A "picture telephone", which will enable future telephone users to be seen as well as heard, has been patented in the United States. The system, which uses two-way television and ordinary telephone lines, produces a small

picture about twice the size of a postage stamp. A small camera and a small picture tube are mounted at each telephone. If the person who is called does not wish to be seen, he can move his head so that it is out of focus. If both the caller and the person called do not wish to use the device, they can remain unseen by simply not turning on the device.

Pictures have already been transmitted by similar telephone devices, but Bell engineers are not satisfied with their quality. They wish to improve the quality before offering " picture phones " to the public.



Finance Minister Subramaniam addressing the Orientation Seminar of Teachers and Lecturers held in the City recently at the Teacher's College, Saidapet.

Membrane Salt Filter

Scientists at the University of California have developed a membrane to filter the salt out of sea water. It is said to be 100 times more effective than any other commercial membrane. The material of which the membrane is made has not been specified.

The membrane, or film, has a large number of tiny pores which, in effect, filter the water and separate the salt brine from the drinkable water. In tests made to date, drinkable water has been obtained at the rate of eight gallons a day per one square foot of membrane area. Of more significance, however, is the fact that the drinkable water has been produced in a single filtering from a brine that contains a 5·25 per cent salt concentration, which is much saltier than ordinary ocean water.

The scientists believe that their process could be used in large-scale commercial conversion plants, because the membrane is both cheap and durable, and the equipment is simple and can operate 24 hours a day without maintenance. Power requirements are as low as for any other salt water conversion process.

Microscope Television

A television system in which a miscroscope plays an important part now makes it possible to see television pictures of some of the world's tiniest creatures. The new magnification system was developed to provide research scientists, laboratory technicians, and educationists with an electronically magnified miscroscope's image for group study.

Called the Elgeet closed-circuit television miscroscope system, the combination of miscroscope, TV camera, and television screen was developed in association with the Allen B. DuMont Laboratories and Sylvania Electric Products, Inc. The system is able to magnify objects more than 2,500 times, it is said.

Rewards for Mineral Deposits Funds

Government has decided to give rewards to persons giving information leading to the discovery of new mineral desposits of economic importance. A reward of Rs. 500 will be given to persons giving information about tin, copper, lead, nickel and some other metals and coking coal. Persons giving information about precious metals like gold, silver and platinum and precious stones like diamond, will get a reward of Rs. 100. A reward of Rs. 200 will be given to persons giving information about other minerals. The grant of a reward is voluntary and does not involve any legal commitment on Government's part.

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